The "Raptor"—p.15

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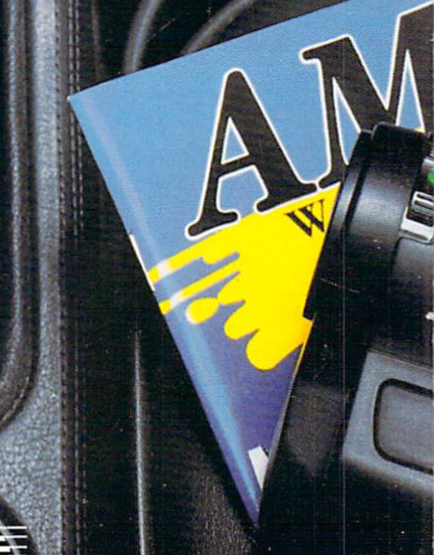
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- Hi-Res Monitors—p.8
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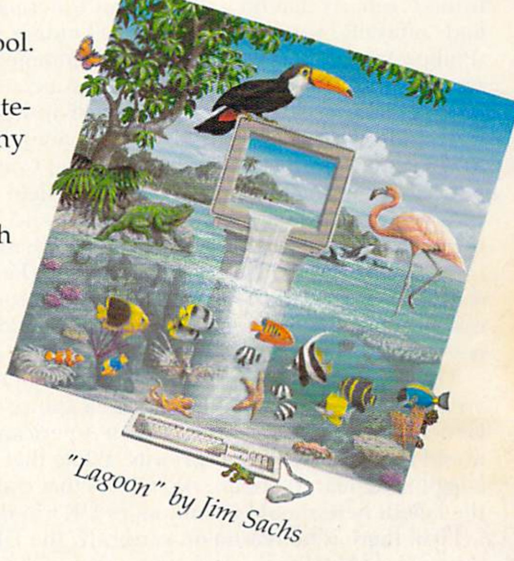
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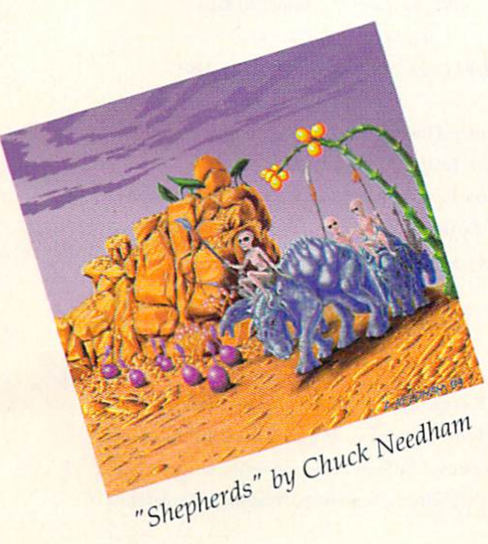


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DIGITAL CREATIONS

FIRST IMPRESSIONS

Down to the wire in the Commodore Derby . . .

The Labor Day weekend has come and gone, which means I'm at my deadline for this column. And while I feel we are *this* close to a settlement of the Commodore liquidation, nothing has been decidied officially on the legal front (see "Overscan," p. 4, for a status report as of press time).

So, reduced to speculation, let me try a "best guess" stab at a likely outcome. If proven wrong by the time you get this issue, I'll gladly wear a facial layer of poultry products—at least we'll have *some* resolution.

Since during the past week I received "absolutely confirmed" reports that no less than four different groups had "officially" won the Commodore bidding sweepstakes (Philips/Amstrad, CEI, Samsung, and Commodore UK), it seems a propitious time for a little guessing and gambling. Having accidentally found myself at the racetrack a few hundred times over the last two decades, let's make the play in horse-racing terms: 50 Win on Commodore UK, 20 Place on CEI, and the rest of the field nowhere.

As reported in "Overscan," David Pleasance's "unconditional" bid for the company may be enough to tip the scales in favor of the UK group. Since both he and Alex Amor at CEI intend to resume immediate production of existing Amiga lines (as opposed to other bidders, who do not), this could wind up a good choice all around.

The negatives—as far as US and Canadian Amiga users are concerned—could be that since Pleasance's first goal is revitalizing the UK market, North American interests would receive only second priority. While that is definitely a legitimate fear, there are two factors that could mitigate the fallout here should Commodore UK win the prize.

First, there is no reason on earth why the UK group can't enter into distribution agreements with North American companies such as CEI, Creative Computers—or anyone else. In speaking with Pleasance, I found no objection on his part to exploring such possibilities.

Second, the timing of the liquidation resolution could play favorably to North American interests. It is no secret that Pleasance would like to see the resumption of *mass* production and distribution of CD32/A1200 systems in time for the '94 Holiday season, because those are the machines in demand in the more entertainment-oriented UK market. Such a rapid ramping-up of production on a mass scale will be difficult to pull off in the short run, however, and Pleasance has intimated that it may be easier and more feasible to first push ahead with the A4000 instead. And since the primary demand for A4000s is in North America, distribution in the States and Canada would receive high priority. Right on!

While all of this scenario-making may be an exercise in speculation on my part, there is every indication that a successful bid on the part of the UK group would serve the interests of the entire Amiga community. And if I've picked the wrong horse in this race, so be it—there's no reason why another successful contestant can't get us all to the winner's circle, too, if they follow the right path to the wire.

Daniel Sullivan

Daniel Sullivan
Editor-in-Chief

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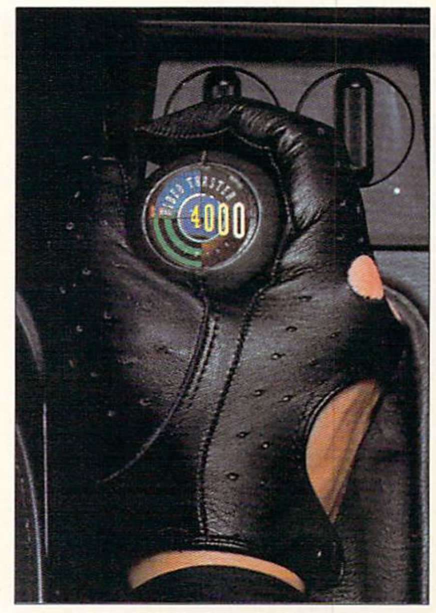


AmigaWorld (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by TechMedia Publishing, Inc., an IDG Company, 80 Elm St., Peterborough, NH 03458. US subscription rate is $29.97, one year; $57.97, two years; $83.97, three years; Canada, $41.97 (includes GST), and Mexico $38.97. Foreign Surface $49.97. Foreign Airmail $84.97. US funds drawn on US bank. Prepayment is required on all foreign subscriptions. All foreign rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100. On-line on BIX: Amiga.World (in Amiga.exchange); CompuServe: 76376,2137; Portal: Go AmigaWorld.

Postmaster: Send address changes to *AmigaWorld*, Subscription Services, PO Box 595, Mt. Morris, IL 61054-7901. Nationally distributed by Kable News Co. *AmigaWorld* makes every effort to ensure the accuracy of articles, listings, and diagrams published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions. PRINTED IN THE USA. Posted under Canadian International Publication agreement # 0257478.

CONTENTS

VOLUME 10, NUMBER 11, NOVEMBER 1994



Rev up your engines, Video Toaster and LightWave fans, because we've got a slew of power tips under the hood this month to help you better harness the potential of the Amiga's favorite video/animation system.

COVER PHOTOGRAPH BY EDWARD JUDICE

OVERSCAN

News, New Products and Networks

Amiga in the Spotlight at ECTS

LONDON—The '94 autumn European Computer Trade Show was full of speculation concerning the Amiga's ability to continue in the marketplace. The fact that the UK management team has placed a bid to buy the company was the talk of the Commodore cognoscenti in the press room. Commodore UK is keen on keeping the platform alive, despite the difficulties of such an undertaking. In addition, several UK software houses and distributors have pledged support for the Amiga—everyone wants it to continue. The most pressing concern of Amiga developers is that Amiga production resume quickly. Most worried that no Amigas would be available for the vital run up to Christmas—the busiest sales period of the year.

Despite the recent turn of events, Amiga product development still looked healthy at ECTS. ***Renegade Software***, developers of Sensible Soccer, showed **Sensible World of Soccer**, a sequel, as well as a great shoot-'em-up, **Ruff 'n' Tumble**, which has already received positive reviews in British magazines. Also on display was **Flight of the Amazon Queen**, a graphics adventure set in the 1940s.

21st Century Entertainment is releasing versions of **Pinball Illusions** for CD32 and A500/1200, in response to the incredible success of Pinball Dreams and Pinball Fantasies. Another title, this one for CD32 only, **Marvin's Marvellous Adventure** is a 90-level platform game.

Microvalue/Flair Software showcased its versatility by offering various new titles from a wide range of categories. Some of the highlights included, **Whizz**, a platform game that features an isometric viewpoint (from above and the side), and **Deadly Racer**, a rally game in which you must drive a car over varying landscapes under different weather conditions.

Team 17 showed off **Super Stardust**, a sort of "Asteroids meets the 1990s" with great graphics and attention-grabbing gameplay, as well as **Alien Breed—Tower Assault** for A500/1200 and CD32. In the works for a later release are **Kingpin Bowling**, a ten-pin bowling simulator, and **All-Terrain Racing**, a 3-D motorsport game.

Gaming hardware wasn't exactly in short order, either. One high note: the new control pad for CD32 from ***Power-Play Europe***. It is designed especially for adult-sized hands.

Support for current product is still increasing, although there's a noticable shift toward PC and console product development as more users are expanding their systems. The CD32, in particular, is receiving a lot of attention in the developer community. Despite the recent fallout at Commodore, it's clear that there's still a great deal of support for the platform in the UK, and if this fall's ECTS is any indication, a great deal of interest remains as well.

—Stuart Menges

Commodore Update

As this issue of *AW* was going to press, no official announcement on the fate of Commodore International had been issued by the Bahamian Supreme Court. While all parties connected with the liquidation proceedings had hoped for a resolution by the Labor Day weekend, no final settlement was reached by that date.

Frontrunners in the bidding process, CEI of Florida and the former management team at Commodore UK, were still involved in negotiations with the court-appointed liquidators. Both Alex Amor of CEI and David Pleasance of Commodore UK reaffirmed their commitment to resuming production, distribution, and further development of the Amiga line. Other bids, including those from Philips/Amstrad and Samsung, were also still on the table.

In a potentially pre-emptive move, Pleasance stated to *AW* that he had refined his group's bid to the liquidators as an "unconditional" one in order to increase the attractiveness of the bid and to move the negotiations to a speedier conclusion. It was believed that bids from the other groups did contain certain conditions that had to be met regarding the purchase of the company's assets and technology.

—DS

New Commodore Hotline Number

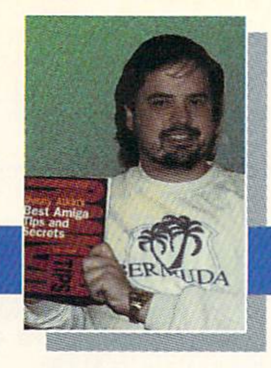
AW regrets that it can no longer continue the present 1-800 Commodore update line. We have received more than 100,000 calls since the hotline was introduced. The expense has run into the tens of thousands of dollars and our switchboard has been crippled for other use. We were disappointed that quite a few people called the hotline several times a day, every day for weeks on end simply because the call was free. It wasn't meant for that purpose.

We will, however, continue to provide update messages at 603/924-2195. This is a separate, direct-dial line. Our switchboard and the 1-800 number will *not* provide access to the new update line. *—DS*

CD-ROM Control

You can add a Mitsumi LU005 or a double-speed FX001D CD-ROM drive to your Amiga 600 or 1200 with the **CD1200** controller ($99.99, ***MicroPace***). ISO9600 and Rock Ridge filesystem software and a jukebox utility for audio CDs are included. The controller is compatible with CDFileSystem, ASIM CD-ROM FileSystem, and multisession Photo CDs. You'll need AmigaDOS 2.04 or later; in addition, to use the internal Mitsumi CD-ROM drive, you'll need a half-height, 5 1/4-inch chassis.

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 60.



Denny on DOS

HINTS & TIPS FOR MASTERING THE OPERATING SYSTEM

By Denny Atkin

#6—Crossing the Tracks

The Amiga uses a custom disk format that lets it store more on a disk than any other mainstream computer. Low-density floppies, which store 720K or 800K respectively on a PC or Macintosh, hold 880K of data on the Amiga. High-density floppies, limited to 1.44MB on the PC and Mac, store 1.76MB when formatted on the Amiga. Because of these varying storage capacities, floppies created on one platform cannot automatically be read on another.

Macintoshes, however, can read PC disks by using Apple File Exchange, and PCs can read high-density Mac disks using commercial utilities such as Mac-in-DOS. Starting with Release 2.1, the Amiga operating system was bundled with a utility called CrossDOS that allows Amigas to read and write MS-DOS floppies. And with a little extra knowledge, you can use CrossDOS to do more than just read PC disks.

SETUP

Setting up CrossDOS is easy. First, you need to drag the PC0: icon into the Devs/DOSDrivers drawer on your boot disk. (If your system has a hard drive, you'll find it in the Storage/DOSDrivers drawer; if you're running a floppy-based system, it's in the DOSDrivers directory on the Storage disk.) CrossDOS will now be active on DF0: whenever you boot your system. If you want to set CrossDOS up to work for a second drive, use the Workbench Icons/Copy function to create a duplicate of the PC0: icon. Rename it to PC1: (or PC2: if you're setting it up for DF2:), click on it once, and select Information from the Workbench Icons menu. Click the UNIT=0 tool type and change it to UNIT=1 for PC1:, or UNIT=2 for PC2:; then click Save.

To activate CrossDOS for the first time, you can double-click the PC0: icon or reboot your Amiga. Now you'll actually have two devices that refer to your internal floppy drive. When performing operations on Amiga disks, you'll refer to the drive as DF0:, as usual. When accessing MS-DOS floppies, you'll refer to the drive as PC0:. That's all there is to it! A standard Amiga floppy drive will read and write to 720K low-density PC disks; high-density drives will also read and write 1.44MB floppies.

> **QUICK TIP**
>
> The commercial version of CrossDOS, available from Consultron, gives the same capabilities to AmigaDOS 1.3 and 2.04 users. Unlike the version bundled with 2.1 and 3.0, it also supports reading and writing to non-floppy MS-DOS devices, such as SyQuest and Bernoulli cartridges. Included free of charge is CrossPC, a slow software-only PC emulator that's handy for running some simple MS-DOS programs.

TRANSLATIONS AND DIFFERENCES

In the Commodities drawer in your Tools drawer, you'll find a utility called CrossDOS. This is used to toggle some of CrossDOS's special features. You'll see a list of available CrossDOS devices on the left; click the device whose settings you want to change. There are two toggle gadgets: Text Filtering and Text Translation. The Amiga and PC use slightly different formats for storing ascii text. While the Amiga ends each paragraph with a line feed, the PC uses a carriage-return/line-feed combination. With Text Filtering selected, CrossDOS will add carriage-return characters in appropriate places when you save ascii files to the floppy, and strip them when you load them into the Amiga.

Text Translation is more sophisticated, actually converting the differences between various character sets. The versions of CrossDOS included with AmigaDOS 2.1 and 3.0 will translate text files that use International and Danish character sets; the version included with AmigaDOS 3.1 also translates Macintosh text files. Make sure you have the text options selected only when you're working with text files. If you have them turned on when transferring data files or executables, the files will be ruined.

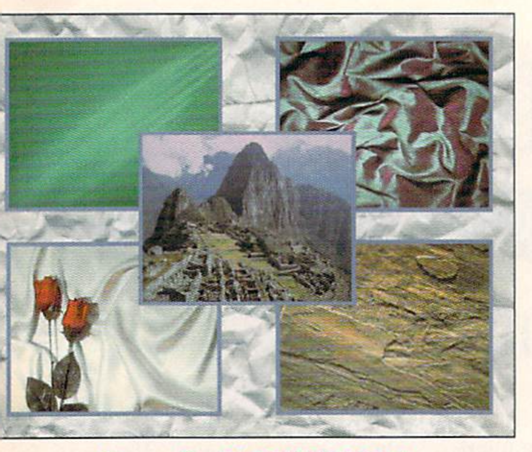
Along with the text-file settings, there are some other things to keep in mind when working with CrossDOS disks. First and foremost, the MS-DOS disk format limits filenames to eight characters, a period, and a three-character extension, so any of your files with longer filenames will have their names truncated. Also, remember that the storage on PC disks is a bit less, so you can't copy a full Amiga floppy to a CrossDOS disk and expect it all to fit.

NOT JUST MS-DOS

CrossDOS is also useful for transferring files to and from Macintosh and Atari ST computers. Macs include a program called Apple File Exchange that permits the transfer of files to and from MS-DOS disks; more recent Macs include Macintosh PC Exchange, which works much like CrossDOS, letting PC floppies appear on the Finder screen. You can use MS-DOS disks as an intermediate format for transferring files between the Amiga and a Mac. Just remember that the filenames will be truncated to the 8.3 format. (You can work around this by using Insignia's Access-PC on the Mac side and Rainer Koppler's freeware APCNames utility on the Amiga.)

You can also use CrossDOS to read and write files from Atari ST disks, as they use essentially the same 720K format as MS-DOS. There are some minor differences that can cause problems reading disks formatted on another computer when using early versions of the ST's operating system, so if possible you should format the file-transfer disks on the ST. ■

Denny Atkin is author of the book ***Denny Atkin's Best Amiga Tips and Secrets.*** *Send suggestions to him via e-mail at DennyAmiga@aol.com, or write to him c/o* ***AmigaWorld.***



Nexxus Pro CD-ROM ($49.99) from VideoWorld offers hundreds of images, fonts, sounds, plus various PD utilities.

CD-ROM Clips

If variety is what you're looking for, you can't go wrong with the latest CD-ROMs from Syndesis and Better Concepts.

Syndesis 3D-ROM, Vol. II ($99.95, ***Syndesis***) offers more than 200 3-D models and includes demos of Caligari trueSpace, Visual Software's Visual Reality, Criterion's RenderWare, and Yost Group's IPAS plug-ins for 3D Studio. The 3D-ROM series features Syndesis' translation tool, InterChange, which exchanges data between 3-D file formats

What a concept: All of your desktop-publishing and word-processing needs on a single CD-ROM. That's just what ***Better Concepts*** claims with its **Clip Art & Fonts** disc. It contains more than 1500 IFF images, 2500 black-and-white EPS and more than 6000 PCX images, as well as 100 Adobe and PageStream fonts. What about something for the musically inclined, you ask? Better Concepts has got that covered, too, with its Music MOD and Sound Effects CD-ROM ($29.95). It comprises more than 2800 music MODs and 6300 sound samples. The disc even includes several MOD and sound-sample players.

Virtual Memory

Are memory-intensive graphics applications eating up your RAM? Forget about expensive RAM chips, let **GigaMem 3.12** (***INOVAtronics***) "refresh" your Amiga's memory. The virtual-memory software—it uses a free portion of your hard drive as RAM—works transparently with all of your operations and adds a maximum of 1.5 gigabytes (500 megs more than previous versions!). With an improved task-caching algorithm, it claims to be even faster than before, too. GigaMem 3.12 requires an accelerator with MMU and Workbench 2.04 or later. You can upgrade for $15.



Update Scan

Applied Magic of Vista, California, now handles distribution and development of the former Digital Micronics' product line, including Broadcaster 32, a nonlinear editing system. Contact Applied Magic at 1240 Activity Dr., Suite D, Vista, CA 92083; 619/599-2626 (phone).

Nova Design, original developers of ImageFX, is now the exclusive distributor of the image-processing program, which was formerly handled by Great Valley Products. In addition, Rusty Mills' Video Guide to ImageFX ($49.95) is no longer available from GVP, but can be ordered directly from Nova Design.

Pixel 3D Professional 2 ($299.95, ***Axiom Software***) now supports AGA, PostScript fonts, and ARexx. In addition, you can now load and save 17 different 3-D formats including LightWave, 3-D Studio, Wavefront, Imagine, and DFX AutoCAD. You can upgrade for $99.99.

Start your engines. With **HyperCache Professional 2.0** ($59.95, ***Silicon Prairie Software***), it'll be hard to keep up with your Amiga now that the software promises to increase your disk speed by as much as 3000 percent! It offers workstation-style I/O caching to any Amiga storage device. The new version sports an improved interface, which displays preferences and statistics. Owners of 1.0 can upgrade for $19.95.

Besides many enchancements to its functions, **Sample Wrench 2.2** ($299, ***dissidents***), the 16-bit sound sample editor, promises to be faster than ever (and uses less memory, too). For example, the Digital Equalization function is reported to run about three times faster than previous versions, and Waveform drawing speed has been increased 5000 percent. Some new conveniences include default save/load paths, auto play, edit smoothing, and ARexx compatibility. Sample Wrench now supports 8- and 16-bit mono or stereo WAVE format files as well as various audio file formats, including AIFF, 8SVX, and Sound Designer Type 1. It requires 1MB of RAM, and AmigaDOS 1.3 or later (AmigaDOS 2.0 or later is recommended). Registered owners can upgrade for $20.

DSS8+ 3.0 (***Great Valley Products***) sound-sampling software now features direct-to-disk recording and playback capability. Other improvements include: support for DBLNTSC and DBLPAL resolutions and for 16-bit AIFF and WAVE formats, and improved Tracker functions.

Mix Like a Pro

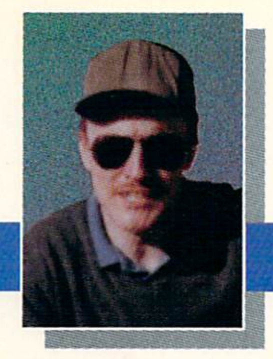
Professional quality mixing is now as easy as **Pro-Mix** ($399.99). ***Phantom Development*** offers a software controlled audio mixing board combining the capabilities of five stereo input channels with the versatility of an ARexx interface.

Each input channel is provided with controls for volume, bass, treble, mute and stereo/mono, while the Master output adds controls such as global stereo/mono, stereo reversal and tone defeat. On-screen oscilloscopes are provided with integrated stereo sampler hardware, and any single channel or group of channels can be sampled concurrently with compatible software. Additional software features include a multispeed, multichannel cross fader/switcher, 8SVX sample playback, MOD file playback, and user-definable preset mixer configurations.

Pro-Mix requires 512K RAM and KickStart 2.04 or later, and attaches to the parallel port. A1000s require a special adapter.

Visual Database

GraphicRecall ($50, ***Focus GbR***) puts an end to frustrating searches through piles of video tapes and long scans of your hard disk to find that perfect graphic or sound file for your latest video project. It creates a "visual" database using minatures of your images. With GraphicRecall and a viewing utility (like View or VT), you can display a graphic from your library of images of various formats, including, IFF, Framestore, GIF, TIFF, TARGA, JPEG, PICT, and PCX. You can also store 8SVX/IFF and most MOD sound files. With the program, you can copy and paste images, as well as print them or export them to various paint or image processing programs. Combined with NoahJi's VLab digitizer, GraphicRecall can also catalog video clips, which play back as "mini-movies" when selected in the database.



Prime-Time PD

ON-LINE SOURCES FOR FREELY DISTRIBUTABLE SOFTWARE

By Tim Walsh

A couple of years ago, a neighbor deposited a recently purchased used A500 and boxes of disks on my kitchen table. I caught something about Gurus and system crashes. Yeah, I thought, the drive was likely out of alignment, the power supply had seen better days—you know, the usual stuff that baffles the neophyte.

Several exasperating hours later, no amount of realigning, swapping of drives, exchanging of power supplies, or diagnostic tests could reveal the problem. By chance, I happened to pop one of the A500's Workbench disks into my trusty A2000. A message appeared stating there was a virus on the disk and would I like it corrected. Another disk from the stack revealed the same message. Alas, there was never anything wrong with the A500—the disks were all infected with a virus.

Virus Troubles

Although their notoriety has waned with time, computer viruses are still prevalent in Amiga's little corner of cyberspace. The program idling in the background on my A2000 that revealed the troublesome virus on the disks was Virus Checker (VC) by John Veldthuis. This $20 shareware program was recently updated to version 6.43



VC's business screen.

VC, my favorite antivirus program since its creation several years ago, detects an exhaustive list of viruses, including ominous-sounding ones like Disaster Master and Future Disaster. VC's new Learn mode writes a VCBrainFile file to the S: directory that records for future reference any nonstandard bootblocks it may stumble upon.

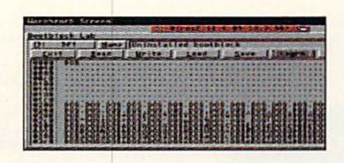
VC scans RAM for viruses and either disables them or gives them the old heave-ho. Insert a floppy disk into any active drive, and its bootblock will be thoroughly checked. You can even configure VC to scan every file on the disk and display a window showing each file as it's scanned.

A hotkey combination reveals a rather extensive interface. It's equipped with an ARexx port, so you can send ARexx commands to VC, and interface options allow you to check an individual file for a virus without having to scan the entire disk. You can also skip directories during the scanning process by pressing Control-D.

VirusZ II

An excellent companion to Virus Checker is VirusZ II, by Georg Hörmann. Now residing at version 1.09, this $15 shareware package thoroughly checks disks for viruses. Placing a small window on the Workbench, this program consists of a series of user-selected menus for file, sector, vector, and bootblock checking.

Selecting one of these in turn calls up control panels for analyzing and scanning files, directories, and bootblocks. There's nothing particularly complicated about using it, and it works fast and effectively to rid your disks of those pesky viruses.



VirusZ checks each sector.

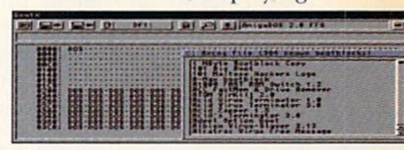
BootX

Another round of ammo for your antivirus arsenal is Peter Stuer's freeware program, BootX v5.23b. Like VirusZ II and Virus Checker, BootX has been recently updated to recognize a series of new, little-known viruses.

BootX is an elaborate collection of files that includes a BootX.Brain file and necessary libraries. Although BootX requires Nico François' ReqTools.library and the Explode.library for compressed files, it's still much of a plug-and-play program, as these libraries are thoughtfully included in the package. BootX can reside as an icon on the 2.0 or later Workbench, and it checks each disk as it's inserted in a drive.

BootX offers an interactive mode, with the program opening on its own custom window. Numerous menu options and screen buttons let BootX check the bootblock of a disk, scan memory for resident viruses, and peruse disks for link and file viruses. Its control panel is a tad confusing, so you should read all the accompanying AmigaGuide documentation carefully to prevent any of the supplied bootblocks from inadvertently overwriting the existing bootblocks on valuable disks.

Like other programs of the genre, its "brain files" can save for posterity any unusual bootblocks that it encounters. When BootX detects in the bootblock a virus or something it suspects to be one, it operates in much the same manner as Virus Checker, displaying a requester asking if you'd like to delete the virus. Click on the Yes gadget, and BootX will replace the disk's suspicious bootblock with a new one selected from its Bootblock library.



Analyze your disks' bootblocks with BootX.

There you have it—a brief overview of files available on the nets for ridding your system of those nasty viruses. What are you waiting for? Go get one.

Network Voice Numbers

BIX
800/695-4882
617/354-4137

CompuServe
614/457-0802
800/848-8199

Delphi
800/695-4005

GEnie
800/638-9636

Portal
408/973-9111
800/433-6444 ■

Alternatives to the Commodore 1942 monitor.

Three Amiga Monitors To Go, Please

All 15-pin video-compatible Amigas.
A-1962, CEI, $499.95
CD-1401, CD Solutions, $549.00
AD-1970, Creative Computers, $489.95

If you, like many other frustrated Amiga users, have been trying without success to get your hands on an almost impossible-to-find Commodore 1942 monitor, take heart. Three independent Amiga companies, Creative Equipment International, CD Solutions, and Creative Computers, are all distributing high-quality replacements. But which one should you choose?

The foremost consideration in the selection process involves more than just clarity and screen borders; it's that each of these monitors is designed for high-resolution, noninterlaced output and therefore cannot plug directly into the Amiga's standard 23-pin monitor port. Owners of A3000-series computers have a 15-pin video port, while AGA machines come with a 23-to-15-pin port adapter. Amiga 2000 owners, however, need a flickerFixer or other deinterlacer type of video card to use any of these monitors.

Of equal concern, none of the three supports composite-video input, as do earlier Commodore monitors such as the venerable Commodore 1084, and most Video Toaster users need at least one composite monitor to use as a combination control and preview monitor. Of lesser importance, none of these three monitors support audio.

A-1962

Manufactured by Electrohome and distributed by Creative Equipment International (CEI), the A-1962 has a stylish beige case that matches your Amiga's decor and a swivel stand that adds to its functionality. It accepts horizontal scan rates from 15 to 40 KHz., yielding a maximum of 800 (pixels) by 600 (lines) noninterlaced resolution.



Front-panel controls include height adjustment, horizontal-display centering, brightness, and contrast. Two included cables are hardwired into the unit: a 15-pin signal cable and a power cable for the 3-prong female power outlet on the A3000 and A4000. To plug this monitor directly into a standard AC receptacle requires an alternative power cable.

The A-1962's display is crisp and accurate, both in terms of color reproduction and resolution. While it provides support for the A4000's Super72 modes, a black border appears on the right-hand side of the screen in Double-NTSC mode. According to tech support at CEI, there is a software fix available for this condition. Subjectively, I did not find that the A-1962 was quite as bright as I would have liked, but this is only a minor quibble.

Comparison Chart

	A-1962	CD-1401	AD-1970
Maximum noninterlaced resolution	800x600	1024x768	800x600
Horizontal scan rate	15–40 KHz.	15–50 KHz.	15.75–36 KHz
Dot pitch size	0.28mm	0.28mm	0.28mm

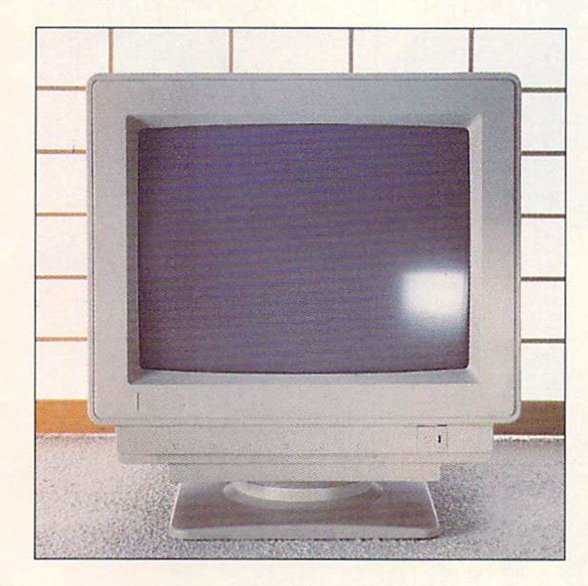
CD-1401

Manufactured by CTX, CD Solutions' CD-1401 is described in its manual as a "Low-Radiation/Anti-Static/Anti-Magnetic" monitor. All very nice, but more to the point, the 1401's display is noticeably

W S

crisper and brighter than that of the A-1962. No black borders surround the left and right edges in Double-NTSC screen modes on AGA machines.

It possesses roughly the same size, color, footprint, and elegant appearance as the A-1962. A few additional features include its ability to autoscan for horizontal frequencies between 30 and 50 KHz and to produce a maximum 1024x768 noninterlaced display—the highest of all the three monitors.



The CD-1401's front panel has six controls, including vertical centering and size. A 15-pin signal cable with small thumb screws is attached, and a standard power cable exactly like the Amiga's is included.

AD-1970

Also manufactured by CTX, but distributed by Creative Computers, the AD-1970 bears a marked similarity to the CD-1401. It autoscans from 15.75 to 36 KHz and produces a maximum 800x600 noninterlaced resolution, making it slightly more convenient to use in video work.

The display, bright and accurate, produces the best picture of the three when used on an A4000. That one factor might give it a slight edge over CD Solutions' higher-resolution CD-1401 for AGA machine owners.



What else?

All three monitors carry a one-year warranty, run exceptionally cool, look great, and are plug-and-play units. You really can't go wrong with any one of these monitors. If you haven't experienced the pleasure of using a high-resolution, noninterlaced monitor, any of these three will be a welcome addition to your Amiga. While AGA users might be happiest with the AD-1970, if pushed to proclaim the best for general-purpose use, I'd give a slight nod to CD Solutions' CD-1401.

—Michael Hanish

Power XL Drive

DKB, $159

All Amigas.
2.0/3.0 compatible.
Accelerator compatible.
***Installation*: Easy.**
***Minimum system*: AmigaDOS 2.0 or higher.**
***Recommended system*: Same as minimum.**

High-density floppy drive for the Amiga.

Few Amiga users have an unlimited amount of money to invest in their Amigas, so they carefully watch their computer dollars. What can you buy for about $150? A used 24-bit graphics board? Maybe a cheap 9-pin dot-matrix printer? A high-speed modem?

One extremely useful and versatile item in this price range that's easily overlooked is an external, high-density floppy-disk drive. Think about it. Double-density (e.g., low-density) disks are becoming increasingly rare as floppy-disk manufacturers phase

Continued on p. 44.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 60.


VIDEO TOASTER
4000

ToasterMan's Tips for Mastering the Video Toaster

If you'd like to trigger effects that have the impact of a speeding bullet, control a switcher more powerful than a locomotive, and create transitions that leap tall buildings in a single wipe—then follow ToasterMan Leemon's tips on mastering the Video Toaster for more effective video productions.

IT'S EASY TO learn how to use the Video Toaster, but difficult to master it. Behind its simple interface lurks a hidden storehouse of mysteries. Although most Toaster users quickly reach the point where they can perform a few basic functions, many remain at that level—unable to do everything they would like to do, and unsure of what other things they could be doing.

Mastering the Toaster takes time and some guidance. While unlocking all of the Toaster's secrets may be beyond the scope of a single magazine article, the following collection of tips should help you move past some of the initial stumbling blocks and point you on the path to greater proficiency through experimentation on your own.

The first three tips point out some basic concepts with which you should be familiar about how the Toaster operates. Think of these as quickie introductory lessons to get you up to speed. The remaining dozen tips are shorter, more specific hints that should benefit Toaster users at all levels.

#1 Keep your eye on the DV1 and DV2 buttons.

THE VIDEO BUFFERS are the key to how the Toaster performs its magic. Once you understand the various ways in which the Toaster relies on them, you'll be much closer to understanding how it operates.

The video buffers have two main roles. When in Freeze mode (the Switcher button marked Freeze is highlighted in yellow), DV1 and DV2 can each store a still video image. The source of these images may be external (e.g., a still captured from motion video), internal (from the LightWave, ToasterPaint, or Character Generator—CG—programs), or a combination of both (such as a video still with a title overlaid on top of it). When in Live mode (Freeze button turned off), the two buffers are used together to convert external video from camera or VCR to digital video. This conversion is necessary in order for the Toaster to manipulate the size or position of a picture with its digital effects or to capture a still image in its Framestore.

In many instances, you yourself control the mode in which the buffers operate. You can switch to Freeze mode by loading a Framestore, or by hitting the Freeze button to capture a still frame, and then switch to Live mode by clicking Freeze off. In other cases, however, the Toaster itself takes control of the these buffers for its own purposes. This can result in unexpected (and unwanted) consequences. For example, when you perform a digital effect using two external video sources, the Toaster automatically switches into Live mode—and dumps whatever still images are in DV1 and DV2 at the time. The lesson here is that if you don't want to lose your Framestores, be sure to save them on disk as soon as you capture them.

The Toaster will also switch you automatically from Live to Freeze mode whenever you run the ToasterPaint, LightWave, ChromaFX, or CG programs, because these programs use DV1 and/or DV2 either for their output or to help create their user-control ►

By Sheldon Leemon

ILLUSTRATED BY ISTVAN BANYAI

screens. There are a couple of surprises you may run into here. First, if the Toaster switches to Freeze mode in order to use one of the buffers, you may later find a frame of random frozen video in the other buffer. This is simply whatever video happened to be in the digital channel when the Toaster made the switch. Another side effect you may experience is that sometimes when you press the Freeze button on the Switcher screen, or its keyboard equivalent, nothing happens. This occurs because Toaster operations that seize the video buffers lock this button to prevent you from accidentally disrupting them. For example, if you exit the CG program back to the Switcher, you'll find that the Freeze button no longer works. To unlock the button, simply select one of the effect icons (such as Smooth Fade) to signal that you are ready to return to normal Switcher operation.

#2 Learn the differences between external (analog) sources and internal (digital) sources.

THE TOASTER ALLOWS you to switch among up to seven different types of video sources. These sources are represented as Switcher buttons labeled 1, 2, 3, 4, DV1, DV2, and DV3. The four numbered sources are normal analog video sources—such as cameras, VCRs, or laserdiscs—that are generated externally, totally independent of the Toaster. The sources marked DV1, DV2, and DV3 are all digital-video sources, containing images that are created, modified, and/or displayed by the Toaster. The Toaster can perform some simple effects (such as wipes) on analog sources, but effects that change the size, position, or rotation of an image require at least one digital source. In order to perform such effects on external sources, the Toaster must switch the buffers into Live mode and use them to convert the external video into a digital format that the Toaster can manipulate. This has a number of important consequences.

First, there is a restriction on the sources that can be used with digital effects. If you are using one of the digital buffers to display a still image, you won't be able to perform digital effects on an external source, since digitization requires both buffers. That's why you can't fly in a moving video image from an external source on top of a still. On the other hand, you can fly in a still on top of moving video because the still is in the required digital format. The rule is that when you are working with one moving video source and one still, the digital effect can be used only to move, rotate, or resize the still. Some digital effects, such as Infinity, Mosaic, Infinite Squeeze, and the "background effects," digitally alter both sources—first the outgoing Main source and then the incoming Preview source. These effects cannot be used successfully with both a still and a moving video image.

Converting external video sources to internal digital format takes a small, but noticeable amount of time. As a result, everything happens a frame or two later in the digital version (where DV1 and DV2 buttons are lit along with the number button) than in the original analog source (where just the number button is lit). Normally, you would hardly notice this delay, but there are cases when it can get you into trouble. If you suddenly switch from a digital version of source 1 to the analog version, for example, you may see a jump or skip in the action. To avoid this problem, use the Smooth Fade effect to switch from the analog to the digital version of the source.

A jump can also arise spontaneously because of the Toaster's habit of allocating the video buffers as it sees fit. When you perform digital effects with two external sources, for example, the Toaster changes the allocation of the digital buffers as needed during a digital effect. (It sets Preview to digital for an effect where the digital video is coming on screen, and Main to digital for an effect where the digital source is moving off screen.) Before performing an "off" effect, you should set the source on Main to digital mode (DV1 and DV2 buttons are lit along with that of the input channel number). Before performing an "on" effect, you should set the source on Main to analog mode (only the input number button is lit). Otherwise, there will be a noticeable jump as you switch from delayed to nondelayed video (or vice versa). To switch the Main source from analog to digital (or vice versa) when you are in the middle of taping, use the Smooth Fade transition as suggested above to avoid a jump when you make the change.

You can use the digital delay as a new type of effect by doing a partial wipe from a delayed source to a nondelayed version of that same source. If you select, say, the Squares or Diamond effect using one digital and one analog version of the same source, simply move the T-Bar halfway down and you'll get a shimmering prism type of effect on the parts of the video that are moving.

#3 Get to know the different kinds of effects.

ALL VIDEO TOASTER effects are not created equal. The Toaster performs several different kinds of effects, each with slightly different characteristics. The two main types of effects are analog wipes and digital effects. In an analog wipe, one picture replaces the other a bit at a time. It's as if the Preview screen were sitting directly behind the Main screen, and part of the picture is wiped away to reveal a portion of the picture behind it. The pattern in which the top picture is removed can be as simple as a right-to-left progression, or as complex as an animation of shattering glass. Remember, though, that the pictures themselves do not move or change size in a wipe. Only the "hole" that allows you to see through one image to the other changes. By contrast, with digital effects, either of the pictures (but not both) can move, change size, rotate, or split apart.

In addition to these basic effect types, there are a large number of variations. Transition effects can proceed either along a geometric path or according to a path in which each step is based on a frame of an animation. Effects can contain overlays of a solid color

Table 1: Combining Toaster Effects

EFFECT TYPE	*Combine with Smooth Fade?*	*Combine with Luminance Key?*	*Combine with ChromaFX?*
Digital Effects	Some	Yes	No
Wipes	Yes	No	Yes
ChromaFX	Yes	Yes	-
Smooth Fade	-	Yes	Yes

generated by the Toaster, a semi-transparent shadow generated by the Toaster, or an AGA image generated by the Amiga's graphics system.

There are also other effects that do not fit into any basic category. These include nontransition effects such as the Art Card or SMPTE Bars effect, Trails effects, Chroma effects, background effects, and so on. All of these effect types vary according to the sources with which they may be used and the other effects with which they can be combined. Although the various combinations are too numerous to list, the main thing to remember is that Toaster features can be combined only to the extent that they do not have overlapping resource requirements. For example, digital transition effects and Chroma/FX both use the digital-video buffers, so it is not possible to combine the two.

Combining Toaster effects can really enhance your capabilities, so you should make an effort to learn what kinds of effects can be used together. Table 1 (p. 12) should give you a basic idea of what kinds of effects go together. Also, remember that if three different effects are compatible with one another, you can probably perform all three at once. For example, it is possible to use luminance keying with Chroma/FX, and then fade the whole image with Smooth Fade.

#4 Learn the keyboard shortcuts.

THE SWITCHER, CG, Paint, and LightWave programs all provide for keyboard shortcuts, which not only can save you time, but also even allow you to perform some operations when the on-screen controls for those functions are not visible. You may want to attach labels such as "CAM 1" or "VCR 2" above the function keys that control your video sources to make it easier to use these keys as Switcher buttons.

#5 Cure the blank-screen blues.

SOME EFFECTS BLANK out the control screen while in progress. If the control screen mysteriously disappears and doesn't come back, press the spacebar to finish the effect and it will reappear.

Most effects can be performed manually by pulling the T-Bar down. You can often switch sources while the T-Bar is "parked" in an intermediate position, using the Main and Superimpose bus buttons. If the effect blanks out the control screen, you can still use the keyboard equivalents (F1–F7 for Main, q–u for Superimpose) to change sources. Keep in mind, however, that some effect types (such as effects with overlays) don't allow you to switch.

If an effect blanks the screen, you cannot use the mouse to select the Smooth Fade icon. It is possible to fade even these effects, though, by controlling the Switcher from a sequencer program such as Toaster Toolkit (DevWare) or T-Rexx Professional (Elastic Reality). When you use this method to fade an effect with a border (including soft edges) or an animation, however, only the border or animation fades away.

#6 Get Help! . . . but only when you need it.

WHEN YOU'RE IN the Switcher, pressing the Help key on the keyboard toggles between RGB-only and Preview control screen modes. If the Switcher control panel ever mysteriously appears on top of your Preview screen, you've probably just pressed the Help key by mistake. Press the Help key again to remove the control panel.

You can, however, use the Help key when you're in the CG program to remind you of some commands for which there are no on-screen buttons. Forgot how to select all text on the CG screen at once? Press Help!

#7 Take down names.

ALTHOUGH THE PICTURES on the icons provide a pretty good clue as to what each effect does, the name of the effect can provide some additional help. When you press the close-parenthesis key—)—on the numeric keypad, a little window pops up under the effects panel, showing the name of the currently selected effect.

#8 Don't forget to multitask.

THE TOASTER CAN multitask, but it isn't always obvious how to get back to the Workbench screen to run another program. From the Switcher screen, you need to press four keys consecutively: Ctrl, Ctrl, Alt, Alt. From LightWave or ToasterPaint, use the normal Left Amiga-M key combination to switch screens. From other Toaster programs, you must first go to the Switcher screen in order to get to Workbench.

#9 Recapture your effect-iveness.

HAVE YOU EVER turned on your Toaster only to see an empty effects panel? You probably loaded the Get Small project by mistake. A Toaster project file includes instructions about both what effects to load and what Toaster programs to load (CG, Paint, or LightWave). The Get Small project tells the Toaster to load only the Smooth Fade effect. To get your effects back, simply load another project, such as the Toaster 3.1 project.

Why did NewTek include a project with almost no effects in the first place? Answer: To allow you to maximize your memory. LightWave animations, for example, take up a tremendous amount of memory. With a full 18 megabytes of RAM, you can play an animation that is only about 6 seconds long. If your animation is larger than will fit in memory, the Switcher simply stops loading it when the memory runs out. If you find that your animation stops before the end, free up some memory by loading the Get Small project *before* you load your animation.

Get Small can also help you multitask with memory hogs like Art Department Professional (Elastic Reality) that require every megabyte they can get. You may want to load the Get Small project before starting such a program. Finally, Get Small may help you load large amounts of data into LightWave or ToasterPaint. Remember, however, to save any projects you are working on in these programs before you load the Get Small project. When you load Get Small, it unloads all of the programs, and you lose whatever you were working on.

If you need only to get back a little memory, consider unloading individual programs instead of unloading everything with Get Small. You can unload ►

just the CG program, for example, by holding down the Shift key and clicking the CG button on the Switcher screen. The same goes for LightWave, but you may need to use the Quit option in ToasterPaint to unload that program.

#10 Make those titles fly.

THE CG'S BUILT-IN page types produce great-looking pages, but they don't allow you to move your superimposed titles around. If you want to fly in a title, you need to use Superimpose on a Framestore page. First, create a Framestore page with a solid black background and render it out to DV1. Next, click the black Superimpose button, set the clip level to about 30, and click the DV1 button on the Superimpose panel. Your title should now be superimposed on whatever video source appears on the Main channel. Try using the Kicked Puppy effect to bounce the title off. Then you can use an effect such as Fly In to bring the title back. Note, however, that only digital effects work with keyed titles.

When you key out the black background, you'll probably lose the shadow and outline along with it. You can solve this problem by changing the color of the shadow and outline to dark gray instead of black.

#11 Make it transparent.

YOU CAN'T MAKE your titles semitransparent just by changing the Alpha setting of the text on the color palette. That's because the shadow and outline sit behind the text. If the shadow is solid, you won't see through to the video behind the text, no matter how transparent you make the letters themselves. The solution is to make the shadow and outline at least as transparent as the text itself, or one level more transparent.

#12 Program your programs.

THE VIDEO TOASTER'S ARexx interface allows you to do almost anything under software control that you could do manually. Even if you can't program a lick, you can use a sequencer program like T-Rexx Professional or Toaster Toolkit to easily create elaborate sequences of Toaster actions. These programs have other talents as well. They allow you to set DV3 to any of 4096 colors, instead of just 9. They also let you edit animated wipes, or create your own, by turning animation files into effects, or effects into animation files. You can create plain wipes, wipes with solid-color overlays, or alpha-channel wipes. These programs require animation files in Amiga ANIM format, however, not Toaster LightWave format. To create your own effects, you'll need an Amiga paint program like Digital Creations' Brilliance or Electronic Arts' DeluxePaint IV.

#13 Fire at will.

IF YOU HAVE A sequencer program, you can take advantage of the fact that the GPI uses the same connections as a joystick firebutton. By placing "pause for GPI" commands in your script, you can use a joystick as a remote control-device for running a slideshow. Each time you press the firebutton, the script executes the next series of commands.

#14 Make small beautiful.

WHEN THE TOASTER shrinks a video image with a digital effect, it does not have the time to smoothly scale the image. Instead, it "throws away" pixels, which makes the small image look blocky and distorted. This isn't very noticeable when the image shrinks or expands quickly, but it creates problems when the image remains still, as it may when you use Positionable Expand or Shrink.

If you need a small image for an "over-the-shoulder" shot, consider reducing a still image in ToasterPaint and using it instead. You won't get a moving image, but the small picture will look very sharp and clean. For moving video, try a positionable wipe to create a "window" in the corner of the screen, and then shoot the second image to fit in the window. If you need clean-looking moving video with an entire screen compressed into a small window, however, consider purchasing the Feral Effects TBC from Feral Industries. In addition to normal TBC functions, this card allows you to shrink a moving video source and to position it wherever you wish on top of another source.

#15 Avoid file follies.

THE TOASTER SAVES a lot of files in a lot of directories, but doesn't give you full access to these directories. For example, if you save a frame with the same number, but a different name, as an existing frame, the second file is stored along with the first. Since the Toaster displays only one filename for each number, however, one of them will become a "hidden" file, which takes up space but doesn't appear on the Switcher's list of available files. The only way to remedy this situation is to use the Workbench or an Amiga file-manipulation program such as Directory Opus from INOVAtronics to rename the duplicate file with another number, or to delete it altogether.

It's not very easy to use the Workbench to manipulate Toaster files, however. That's because there is no icon for important Toaster directories such as Framestore and 3D. Be sure to turn on the Show All Files feature of the Windows menu on the Workbench to see all of the directories in your Toaster partition.

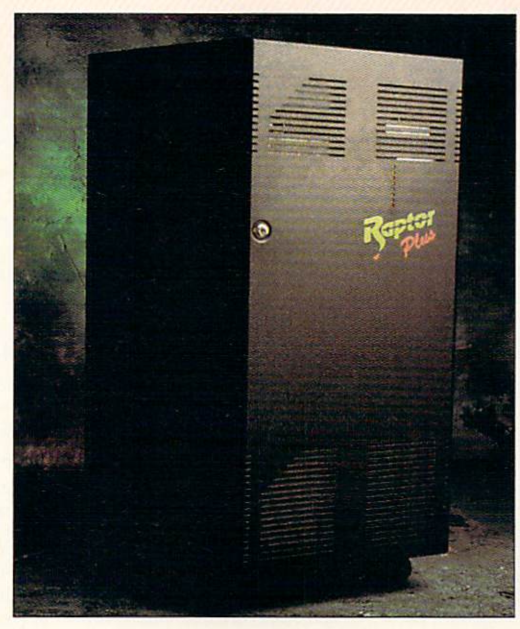
Many Toaster file requesters leave something to be desired—for instance, they may not have buttons for all your drives. In most cases, however, you can type the directory path right into the text box of the requester. If you want to use drive JH0: in LightWave, for example, you can type the drive name in the file requester and press Return to see a listing of the top directory of that drive.

Putting these tips into practice may not give you the inside track to Truth, Justice, and the American Way, but they should help you unleash more of the Toaster's tremendous power and potential . . . and make your next video/animation project just super! ■

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ON THE FAST TRACK

The Raptor processing engine is a locomotive that drives LightWave rendering faster, faster, faster.

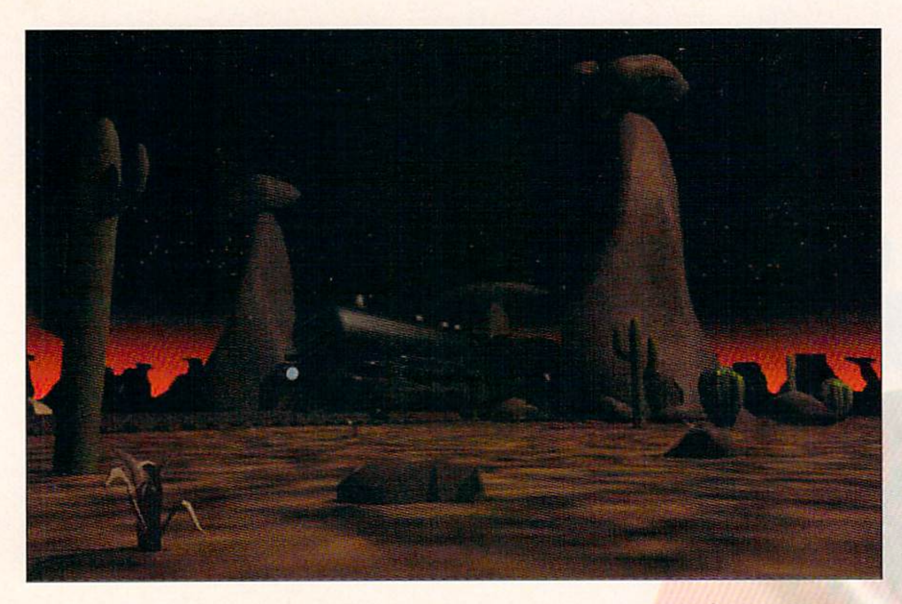


AS DIGITAL IMAGES become more complex, computers are challenged to keep up. Even a fast Amiga 4000 can take an hour to generate a complex 3-D image—and more than a day to produce the 30 frames required for one second of animation.

BY SHELDON LEEMON

For hobbyists, such speeds are a mere annoyance (we do become spoiled, don't we?). But for professionals, slow rendering may derail a project. So where can a 3-D professional catch the Silver Bullet to Renderland? Up ahead, at DeskStation.

DeskStation Technology's Raptor, a dedicated rendering box, speeds the output of NewTek's LightWave software by 10–40 times (see the sidebar "Ahead of Schedule" for details), and the recently announced Raptor Plus promises even speedier performance. The Raptor is the direct descendant of the Video Toaster Screamer, the rendering engine NewTek announced in late 1993 but never shipped in quantity. The Screamer was to have had four MIPS R4400 proces- ►



Train Scene, used in the speed trials (see "Ahead of Schedule," below), is a still from Jon Tindall's Ghost Train animation.



The Logo Scene test image brought a more dramatic speed increase from the Raptor.

sors, giving it 40 times the processing power of the Toaster 4000.

For a variety of reasons, NewTek decided to stop work on the Screamer, concentrating instead on the Flyer, the company's upcoming nonlinear editing system. NewTek's change of plans cleared the way for DeskStation Technology, the company actually producing the Screamer hardware, to introduce its own scaled-down version, called the Raptor. Don't be fooled by the "scaled-down" reference, though. The Raptor is huge, weighing 80 pounds and standing almost three feet high. It is also expensive, costing $13,900 for a complete system. Unlike the original Screamer, the Raptor comes with only two R4400 processors, each with 64MB of RAM. You can, however, connect several Raptor systems together to achieve performance equal to, or better than, that of the Screamer.

UP TO SPEED

Because the Raptor is basically a computer without a monitor or keyboard, you must connect it to your Toaster system in order to use it. This requires both hardware and software. The hardware is an Ethernet networking card, which you must install in your Toaster machine and connect to the Raptor's built-in Ethernet card with thin-wire cable. Currently, the Raptor is compatible only with the Commodore or Oxxi Hydranet Ethernet adapters. The software is a special version of LightWave, which costs an additional $2000. This version includes a ScreamerNet control panel (see Figure 1, next page) that allows LightWave to communicate with the Raptor.

Using the Raptor from LightWave is relatively simple, but it is not automatic. Before you can render with the Raptor, you must initialize the external processors and send them the data describing the current scene. Although ►

Ahead of Schedule

How does Raptor rendering compare to rendering on an A4000/40—and to an even faster 40 MHz A4000/40? To find out, I tested all three systems with both of the images pictured above.

	A4000/040	A4000/040, 40 MHz	Raptor
Train Scene	6126 seconds	3293 seconds	497 seconds
Logo Scene	13,625 seconds	6791 seconds	601 seconds

Train Scene is a frame from Jon Tindall's animation, Ghost Train, which we've used in past evaluations of 68040 accelerators. (It was the "complex render" task in the WarpEngine vs. G-Force '040 review in *AW*, Sept. '94, p. 10.) This scene uses only ray-traced shadows and medium antialiasing.

In the Logo Scene, a large text logo appears in front of the Texture Examples scene that comes with the Video Toaster. The text is 100% transparent, with an index of refraction of 1.7, so that it appears to be made of glass. The scene uses ray-traced shadows, reflections, and refraction, as well as low antialiasing. □

—SL



- *Broadcast quality non-linear editor*
- *16 bit audio with the Toccata*
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- *Digital character generator*
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- *Powerful, easy-to-use MovieShop software features time line & hierarchical editing*
- *Optional Toaster® interface*
- *$1750 for VLab Motion or $2150 with the Toccata*

"VLab Motion rivals professional equipment which costs $50,000+. Before your product, I would spend hours and hours of very expensive edit suite time doing single frame editing. With VLab Motion, I can set up an entire 3D animation with digital effects and double-check my work in super-clean 30fps video thanks to MovieShop software. Now I finish in approximately 20 minutes every time I go into an editing suite saving well more than the price of the system. I look to the future of this product with great enthusiasm. I am very impressed with VLab Motion in total . . . ***This is the future of video editing.***"

— Robert Van Valen ("Video Bob")
CBS TV Multiple Award-Winning Animator

Noah Ji's

Also distributing Retina Z-III, Retina Z-II, VLab Y/C, and Toccata 16.

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Voice: 303.499.1975
Fax: 499.1979 • Tech: 433.7031 • BBS: 969.8967

Ethernet generally provides fast file transfer, the prerelease version of the LightWave ScreamerNet software takes a long time to transfer the data to the Raptor. In fact, it took nearly two minutes to transfer data about a scene whose files occupy less than 200K of disk space! We can only hope that the transfer speed will improve in future versions of the software.

Once the data is loaded into the Raptor, you must choose whether to have each of the two processors work on one-half of the same frame, or each on a separate frame. For a test render of a single frame, you'll want to use both processors on one frame, but for animations, it is generally better to have one processor working on each frame. That way, if one half of the picture takes much longer to render than the other, you won't have one processor sitting idle waiting for its mate to finish. After you've selected the render mode, you press the Render button, and away you go. At this point, all LightWave is doing is waiting for data from the Raptor. Unfortunately, however, it can't just collect the finished images in the background while you work

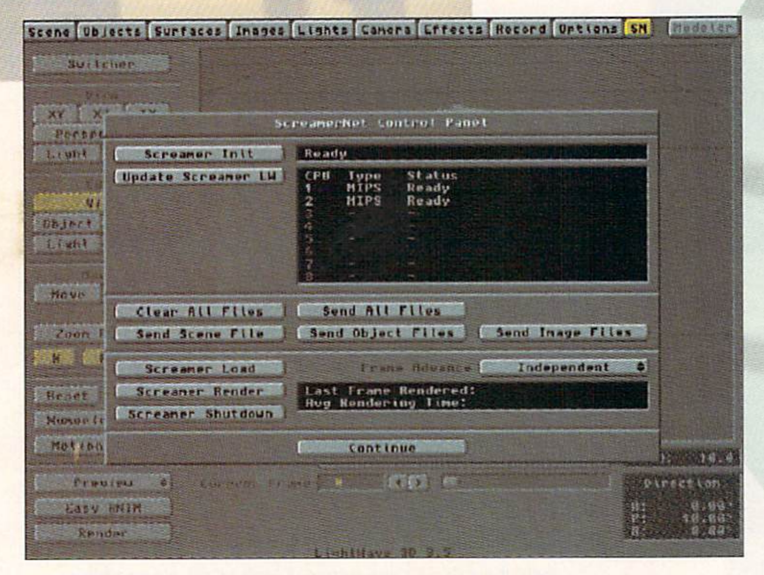


Figure 1: The Raptor requires a special version of LightWave that includes a ScreamerNet control panel.

on another scene, or use the A4000 to render. This is another area in which the preliminary software could stand some improvement.

On the bright side, you won't have to wait long for your scene to finish rendering. The actual degree of speed increase depends on the complexity of the scene and the number of time-intensive features (like raytracing) that are turned on. Even simple scenes render at least eight to ten times faster than normal. Scenes that use several features like transparency, ray-traced reflections, refraction, shadows, and bump maps, however, render anywhere from 20–35 times as fast as on a stock Amiga 4000 (see the sidebar, p. 16). For the professional 3-D artist, this translates into test renders that take minutes instead of hours, and complete animations that take a day instead of a week.

Alternate Tracks

To address differing needs, DeskStation is currently releasing two new variations on the same theme. One, the Raptor Plus ($16,900), an updated version of the original Raptor, uses a pair of the faster R4600 RISC processors (running at 133 MHz) and includes 128MB of RAM per processor. Owners of the original Raptor can upgrade to the Plus version for $5000 (this involves sending your Raptor to DeskStation for a chip swap). DeskStation also maintains that at some point, Raptor owners may be able to upgrade their systems to full dual-processor workstation status. Beta testers have reported that Raptor Plus performs twice as fast, on average, as the original Raptor.

The other new model, the Raptor II, is a complete, non-Amiga workstation, with a keyboard, mouse, triple-speed CD-ROM drive, 500MB SCSI hard drive, Ethernet adapter, 24-bit color-display card, and 17-inch color monitor. The Raptor II fits in a normal-sized tower case and comes with a full version of the Windows NT operating system (the original Raptor has only a limited version of Windows NT). The total price for this package is under $10,000. Although the Raptor II has only a single processor, with 32 MB of RAM, it uses the 133-MHz MIPS R4600, a newer chip with 50% more processing power than the R4400 used in the original Raptor. That means it will render at about 75% of the speed of the original Raptor, as well as running the MIPS version of any Windows NT software at blinding speeds.

Admittedly, there isn't much Windows NT software available yet, but with Microsoft backing it heavily, and with its easy portability to the forthcoming 32-bit version of Windows, you can expect a flood of such software in the next couple of years. You can also expect a number of custom applications designed specifically for the Raptor, including WinImages FX and WinImages Morph (from Black Belt Systems), Elastic Reality (from the former ASDG), Real 3D (Realsoft), Designer (the NT version of RIO by AT&T), Invisage (Byte by Byte), and QFX (Ron Scott).

First-Class Fare

Clearly, the Raptor is currently priced beyond the means of the casual user. You should, however, keep this pricing in some perspective. Professionals who are accustomed to paying $30,000 to $100,000 for such a powerful workstation are apt to look on the system as a bargain. For these users, the Raptor will pay for itself after only a few jobs.

More importantly, however, you should not overlook the long-term trend for technology to become less expensive. Two years ago, the first Pentium workstations were also priced at over $10,000. Today, you can buy a comparable system for less than $2000. So it is not unreasonable to expect that the Raptor represents the average level of power that we can expect to enjoy in the not-so-distant future.

For now, it is nice to know that although you may not require the power of the Raptor immediately, it is available should the need arise. ■

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The Joy of Fax Amiga Style

With the right equipment and the relevant "facts," you can turn your Amiga into a first-class fax setup that's better, cheaper, and more convenient than a dedicated fax machine.

PERSONAL COMPUTERS GIVE you instant gratification. So does fax. Just as you see almost instantly the results of your keystrokes on your Amiga's screen, facsimile machines deliver pages practically at the touch of a button. The two technologies are a natural blend, and understanding computer faxing and how to do it with your Amiga could save you the expense of buying a fax machine, or give you a better-quality fax setup if your current fax equipment is anything less than the top of the line.

The appeal of faxing lies in its convenience, speed, and low cost, not in the quality of its output, which, unlike that of photocopiers, varies only from poor to barely acceptable. Most fax machines use rolls of thermal paper that you have to cut into pages with scissors. The paper feels funny, tends to curl up, and becomes quickly yellow or faded. The printing—low-resolution and jaggy—isn't much better. The best machines output to plain paper using inkjet or laser technology, and are capable of higher resolutions. If you use your Amiga and printer for faxing, however, the chances are that you already have the equipment to match the quality of these better fax machines. *(For descriptions of products mentioned in this article, see the "Amiga Fax Products" sidebar. For information on contacting the developers of those products, see the "Manufacturers'/Distributors' Addresses" list on p. 60.)*



How Faxing Works

To understand computer faxing, you have to know how faxing works in general. What happens when you send a fax between two fax machines is as follows: You enter the fax number of the remote machine into your machine and feed into it the pages you want transmitted. The local machine dials the remote machine, the two connecting in the same way as do two modems. The local machine scans the pages slowly, creating a digitized version and sending it over the phone line. The remote machine converts the digitized version and prints out the data. When all pages are sent, both machines hang up.

Obviously, with dozens of manufacturers of fax machines, a standard was needed so that they could all communicate with one another. Almost all fax machines worldwide now incorporate what is known as the Group 3 standard. (There were earlier Group 1 and Group 2 standards, and if you really have to, you can use most Group 3 fax devices to [slowly] send or receive from one of the obsolete machines. There is a Group 4 standard, but it requires digital phone lines [ISDN] and so is currently of limited use.) ►

By Dale Larson

ILLUSTRATED BY JOHN S. DYKES

Group 3 machines scan at a resolution of 203x98dpi (dots per inch) in normal mode or 203x196dpi in "fine" mode. Their images are compressed and transmitted at 9600 bps (bits per second). Hence, an 8.5x11-inch page filled primarily with text typically takes about 30 seconds to transmit in normal mode. Fine-mode transmission about doubles the time.

An extension to the Group 3 standard, Group 3bis, provides for transmission at 14.4kbps (thousand bits per second) and a resolution of up to 406x196dpi. The higher resolution mode is not much in use, but 14.4kbps transmission mode is becoming common. Obviously, the faster speed quickly offsets in phone-bill savings the cost of the faster modem. (If you have a device capable of 14.4kbps, you can still send faxes at the slower 9.6kbps speed.)

Other than when purchasing and setting up a fax device, you don't really have to worry about the details of all of these standards. Fax machines automatically negotiate the highest speed at which they can connect. You need to know only that fine mode means you'll spend more time on the phone; otherwise, the standard doesn't matter. If you choose to send a fax in fine mode and the machine on the other end does not support it, your machine will automatically fall back to normal mode.

How Computer Faxing Works

Because fax machines send digital data over phone lines, computers can naturally get in on the act. Most new computer modems include fax capabilities (the standards used are different, even for connecting at identical speeds). If you have such a modem, you can take advantage of its built-in fax feature just by adding fax software—in the same way you use terminal software to take advantage of the data aspect of your modem.

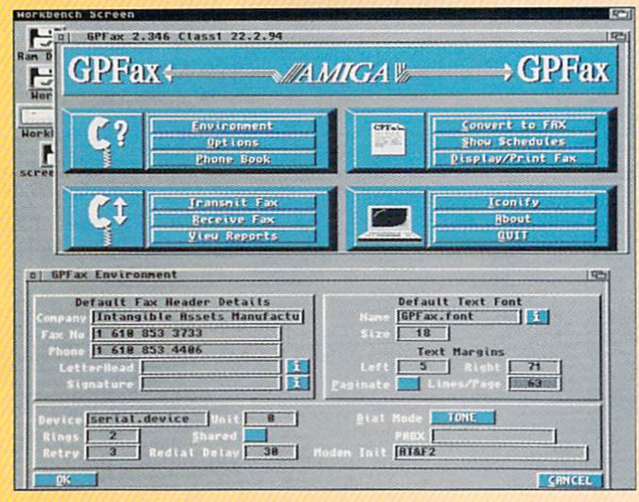
You can display received faxes on screen, or you can output them on your system's printer. You can also send faxes directly from an application rather than first printing them out. You can even scan a document for transmission with your fax modem.

All current fax/data modems support Group 3 faxing. Some may support only 9.6kbps, but many support 14.4kbps. What really distinguishes between

Amiga Fax Products

GPFax 2.346
GPSoft
$70 (street price)

GPFax is the best-established Amiga fax software. It has undergone continuous revision since 1991, making it a powerful, flexible, and reliable package. The latest version works with just about any Class 1 or 2 fax modem, and can take advantage of most of their special features. If you want to use Supra's silent-answer feature or a Class



The GPFax user interface is simple and easy to use, with all options just a mouse-click away.

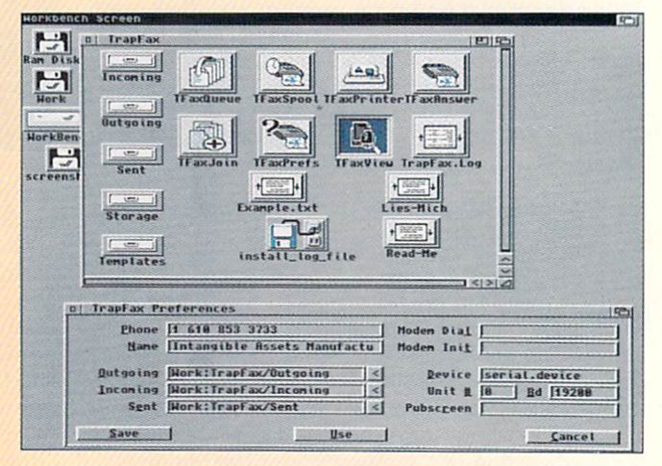
1 modem, GPFax is your only choice. It now comes as a single disk and uses Installer to install the correct options for your modem. It also has extensive ARexx support. The program provides a single-screen, point-and-click user interface, which, while nonstandard like the old ADPro, is simple and easy to use.

My one complaint about GPFax is that it uses A4 paper—longer than 8.5x11—as its standard size (GPSoft is, of course, an Australian company). Therefore, when you use GPFax to send text output, the destination fax may alternate full and very short pages. The way around this is always to use GPFax's printer device and to print from another application in order to send a fax.

Excellent technical support is available directly from the programmers at GPSoft by phone, fax, e-mail, or UseNet. Some support is also available from Supra, at least for copies bundled with the company's modems.

TrapFax 1.0
Distributed in the US by Expert Services
$100 (street price)

Released last fall, this newcomer is sure to start a healthy rivalry with GPFax. While it doesn't have all of GPFax's polish and fine touches, it does have most of the same major features. True, TrapFax does not have ARexx support, nor does it support Class 1 modems; manual faxing capability also seems to be missing. However, like GPFax, it does allow faxes to be scheduled for sending



TrapFax employs a Workbench-style interface with numerous drawers and icons.

them is whether they have a Class 1, Class 2, or CAS interface. (CAS, a standard incompatible with Amiga fax software, is used by Intel modems and a few others.) Just as terminal software uses the AT command set for data modems to dial and to set options, fax software needs an interface for fax modems. Class 1 and Class 2 are international standards for fax-specific AT commands.

Class 1 uses a small command set and forces the computer to do quite a bit of work in real time during faxing. Most fax modems that don't indicate their type use the Class 1 standard. Class 2 uses a much larger command set, so that the modem demands less of the computer. For Amigas, this is an important consideration. Because serial overrun is a classic problem on the Amiga, anything is welcome that makes response to the serial port less critical.

While the cheapest fax machines cost more than $200, with good ones going for much more, a good fax/data modem can be had for under $150 and is useful for a lot more than faxing. Hence, economics strongly favors computer faxing.

SENDING FAXES

Computers excel at sending faxes. Attach a fax modem, plug it into the phone line, install your fax software, and away you go. Most fax software is capable of redirecting printer output so that when you print from an application, the output can go out as a fax rather than to the printer. This saves time and paper, and produces higher-quality faxes. By skipping the scanning done by a fax machine, you eliminate smudges, smears, and other marks or errors from the process.

The exact method of sending faxes from external applications differs slightly from one fax software package to another, but the basic idea is the same. You start the fax software and indicate that you want printer output sent to the fax instead. Once you've done so, everything sent to the Preferences printer by any application (word processor or paint program, for example) goes to the fax software instead of the printer. (An exception is if you have a PostScript printer, in which case you must be sure to print in graphics mode or to the Preferences printer rather ►

at a later time, printer capture for faxing from other applications, log files, and flexible viewing of faxes on screen.

TrapFax's interface is based on a Workbench drawer containing several programs, each of which handles a different task, such as viewing faxes or setting up to receive incoming faxes. I found this interface more difficult to use, but I saw several clear advantages for some advanced applications. For example, handling faxes on a network of Amigas looks much easier with TrapFax than with any other Amiga software.

Expert Services provides courteous telephone, mail, and fax support in the US, as well as a mail address for the software's authors in Germany. (See "Reviews," Aug. '94, p. 14, for a full review of TrapFax.)

AmigaFax
C-Born Software
Shareware, $50

This shareware package has many of the same major features as the above two commercial programs. Its documentation does not indicate that it supports Class 1 modems, so presumably it supports only Class 2. It has special support for TeX, however, making it especially well-suited for some programmers.

Unlike GPFax and TrapFax, AmigaFax does not use the standard IFF FAXX form for its data files. Also unfortunate is the lack of a 2.0-style user interface. For those on a budget or using TeX, however, AmigaFax might be a good alternative.

El Cheapo Fax
Freely distributable

Just as the name says: The bare minimum to send and receive faxes with your Amiga and a Class 2 fax modem. Nothing is automatic. No phone book, no scheduling, nothing. You can use a special Preferences printer driver to create fax files as output from other applications, but you must then send that file on your own. You cannot directly view faxes, but must convert them to IFF for display.

The interface is CLI-only, but there is a shareware add-on package called ECFax Enhancer that provides a GUI (Graphical User Interface). The English documentation for ECFax Enhancer is difficult to read, though I'm sure the French is much better.

If your budget has you choosing between dinner and software, you might get by with El Cheapo Fax. Otherwise, choose the commercial programs. Their luxuries are well worth the price.

PhonePak VFX
GVP
$300 (street price)

The PhonePak is a voice-mail/fax-management solution, but does not include a data modem. The hardware is compatible only with its own (included) software. Basically, PhonePak is a fancy answering machine that records incoming messages as standard Amiga IFF sound files. Its voice-mail capabilities, however, are sophisticated, offering you a wide variety of options for handling incoming calls. PhonePak also automatically detects and receives fax-machine calls, and it can combine a fax and a voice message in a single file. In addition, it offers a number of options for managing outgoing faxes, including a provision for sending faxes directly from applications programs. (For a review of PhonePak VFX, see Feb. '93, p. 24.)

FaxPak
Teledisk Systems
$299.

While not an Amiga-specific solution, this is a valuable if little-known piece of hardware. It turns your computer's printer into a plain-paper fax (receive only). It has a small, attractive case that houses fax-receiving hardware, phone in and out, parallel in and out, and serial in and out. It also functions as a printer switch (you can hook one computer to the serial in and one to the parallel in, and they both print to the printer connected to the parallel or serial out). It stores up to 40 pages of faxes received while the printer is off or offline, (i.e., out of paper).

The interface is a bit trying (you must call the box from a touchtone phone to program it), but most people just need to set it once and then forget it, so that is tolerable. If you want printouts of all your incoming faxes, the FaxPak is a great way to go.—*DL* □

than to the serial or parallel port.) The fax software either creates a file in fax format or prompts you for the number to send the fax to. Once done faxing, you turn off the printer option in the fax software so that your applications can again use the real printer.

Unfortunately, the Amiga's current standard operating-system printer support doesn't allow you to choose from multiple printers (or from fax or printer) at the time of printing. The way you configure Preferences and your fax software before you print defines where your printout will go. If you forget to activate your fax software, your printer will be wasting paper before you realize your error.

In the bells-and-whistles department, fax software can provide some nifty options when you're sending faxes. Some programs can schedule the sending of a fax, choosing a time when phone rates are lower. Some can keep a large database of phone numbers and automatically send a single fax to many numbers. Finally, your software may keep extensive logs of when you sent faxes, where you sent them, and what they were. Programs even exist that can estimate the phone bill for sending your faxes!

As far as system requirements go, a fairly minimal Amiga can send faxes. Some software can send straight ascii or IFF files from floppies on a 512K Amiga. A hard drive is better, though, and expanded memory to hold both the fax software and the application is necessary for faxing from an application. An accelerator shouldn't be necessary with a Class 2 fax modem, though you might need one with a Class 1 modem.

Also, if you use your computer to send faxes, you may want to have a scanner attached to your computer. In that way, you can even fax hand-written notes or other documents not already in your computer.

IT IS EASIER TO GIVE THAN TO RECEIVE

Once you receive a fax on your computer, you can leave it stored on your hard drive (perhaps in compressed form), display it on your screen, convert it to IFF, or dump it to your printer. Getting it into your Amiga is the hard part.

If you are going to set up your home or office to receive faxes, you have many decisions to make. Do you need a 24-hour automatic fax line? Do you mind picking up the ringing phone only to discover that the call is for your fax machine? Can you justify the added cost of a new phone line or distinctive ringing service? Do you want to leave a computer running 24 hours a day?

The simplest (and most expensive) thing to do is to have a dedicated phone line installed. Leave your computer with fax software and a fax modem turned on and attached to that line, and you can receive faxes automatically, 24 hours a day. You just have to remember to kill the fax software before using your modem to dial out to BBSs, and to start the fax software again when you're done.

It is also possible to have a single line that shares fax and data. If you have a BBS, for example, you can set up most modems and software to detect whether a call is fax or data and to respond appropriately. And remember, if you don't really need a dedicated line, you can always tell people to send faxes to you manually by simply calling ahead first.

You can also set up a voice line to receive faxes automatically 24 hours a day. When you want something for nothing, though, receiving faxes is complicated. There are a couple of options.

When most sending fax machines finish dialing, they start sounding a tone on the phone line every few seconds. This is a CNG tone, also called an Auto Fax Tone or Calling Tone. It alerts any person or machine picking up the incoming call that a fax is on the way. To take advantage of this, you must have special hardware. Some Supra fax modems have a "silent answer" feature. When a call comes in, it is answered by a person or an answering machine (which you attach to the modem rather than to another jack). If the Supra detects CNG tones, it picks up the line (and cuts off the answering machine); otherwise, it ignores the call. Someone detecting an incoming fax call just hangs up. Computer and office-supply stores also sell fax switches that detect CNG tones. And GVP's PhonePak works well for sharing a line, as the answering machine is built in.

Finally, most local phone companies provide a service called Distinctive Ringing (it has other names in some areas), which gives a single line two or more phone numbers. When a call comes in, a distinctive-ringing pattern indicates which number was called. Some modems can decipher these rings and respond only to certain ones. You can buy distinctive-ring decoder boxes from many computer and office-supply stores. These connect to the line and have several outputs, one for each distinctive-ring pattern. By plugging your fax into such a box, it will answer only fax calls.

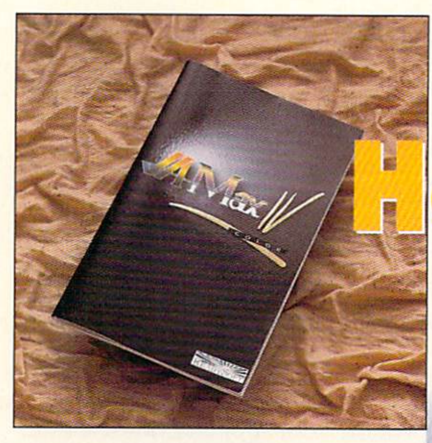
Faxing is convenient and becoming more widespread all the time. Data/Fax modems are coming down in price and going up in speed (28.8kbps is now affordable for data modems). The software is getting more sophisticated and easier to use. With it, your Amiga is a great way to send and receive high-quality faxes. ■

Dale Larson, formerly a software engineer in Commodore's Amiga Networking Group, is now head of his own company, Intangible Assets Manufacturing, which specializes in Amiga communications products and consulting. His book, ***Connect Your Amiga! A Guide to the Internet, LANs, BBSs and Online Services****, is due out later this year. Write him at IAM, 828 Ormond Ave., Drexel Hill, PA 19026, or via the Internet: dale@iam.com.*

Digitizing Your Voice

Several modems provide voice capability in addition to data and fax. These modems can digitize and compress audio from the phone in real time. Such a compressed data stream (at 19.2kbps, for example) can be spooled to disk by the computer and played back over the phone, modem speaker, or computer speakers. Modem brands that currently offer voice models include Dolphin, LineLink, and ZyXEL.

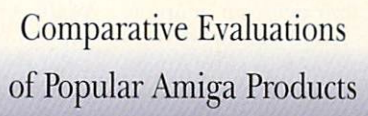
Several freely distributable software packages exist that turn such a modem into a simple answering machine. AVM, an Amiga shareware software package, can use such a modem to create a fairly sophisticated voice-mail system and to receive faxes (using separate fax software). The GVP PhonePak also offers sophisticated voice-mail features. *—DL* □







Comparative Evaluations of Popular Amiga Products



MACINTOSH EMULATION

A-Max IV vs. Emplant

By Denny Atkin

AN MS-DOS MACHINE is essentially so different from an Amiga that to emulate it you either have to suffer with major compromises in functionality or virtually duplicate the guts of a PC inside your Amiga's case. Not so with the Macintosh, though. Based on the same Motorola 680x0 processor series, the Macintosh and the Amiga speak the same basic language, and only a little translation is needed to bring the two computing worlds together. Compared to a real Mac or a 486 system, a Macintosh emulator is a relatively inexpensive way to run applications like Quark XPress and Adobe PhotoShop on your Amiga.

The first Macintosh emulator for the Amiga was ReadySoft's A-Max. It did a great job of emulating an early black-and-white Macintosh Plus—too good a job, actually, for it took over the Amiga entirely and allowed you to run only monochrome Macintosh software. While today's version, A-Max IV, enables you to run Mac programs in full color, multitasking happily with your favorite Amiga applications, it was not the first to do so. That honor belongs to Utilities Unlimited's Emplant board, which not only brings color Macintosh emulation to the Amiga, but also purports to be a jack-of-all-trades solution that will soon emulate everything from an IBM 486 to an Atari 800.

Similar in concept, both products are designed for 68020-or-faster Amigas equipped with Zorro II slots. (Neither one is usable on slotless Amigas like the A500 and A1200; the old A-Max II cartridge is your only choice for those machines.) They differ, however, in features, compatibility, price, and peripheral requirements. Let's compare the two, highlighting those differences with the hope of helping you choose the best Macintosh emulator for your needs.

A-Max IV

A-MAX IV IS ACTUALLY an upgraded version of the A-Max II Plus board, an emulator that preceded Emplant to market by over a year but—like the original A-Max—supported only black-and-white and took over the entire Amiga. A-Max IV is available either as a stand-alone product or as an upgrade to the A-Max II Plus board, consisting of a replacement for one socketed logic chip on the board, a new program disk, and an updated manual.

A-Max IV plugs into a Zorro II or III slot and includes a cable that attaches to your floppy drive. Before plugging in the board, you'll need to install a set of 128K Macintosh ROMs pulled from a Mac 512K or Mac Plus. These are needed to boot the Macintosh operating system and should run you less than $150 from mail-order companies (dramatically less if you can find a used set on the online networks). You'll also need a copy of the Macintosh System 7.0 or 7.1—I highly recommend 7.1—which you should be able to purchase from any Apple dealer.

On the Amiga side, you'll need at least a 68020 microprocessor, a hard drive, AmigaDOS 2.1 or later, and a minimum of 4MB of fast RAM (6MB is more reasonable, in view of the size of the Mac System 7). I also strongly recommend a high-density Amiga floppy drive, as many newer Macintosh appli- ►

cations now ship on 1.44MB floppies. If you're running the emulator on an Amiga 2000 or 3000, you'll also need a graphics card like the Picasso or Retina if you want to use more than 16 colors on the Macintosh screen.

Peripheral Connections

The back of the A-Max IV card sports two eight-pin mini-DIN ports that act as Macintosh-standard RS-422 serial ports. You can connect Macintosh modems, printers, LocalTalk networks, and (with an adapter) MIDI devices to these ports. There are no drivers included, however, for using these ports as extra Amiga serial ports.

A-Max IV uses your Amiga's built-in disk-drive controller for storage. Whereas earlier versions required special drivers for third-party SCSI controllers, A-Max IV uses the standard AmigaDOS device drivers and therefore should work fine with just about every Amiga hard-disk controller. You can dedicate a partition on an Amiga hard drive for Macintosh storage, create a virtual disk drive that's stored as a file on an Amiga partition (this is really too slow for everyday hard-drive use, but is handy for faking floppy disks), or plug a real Macintosh hard drive into your Amiga's SCSI controller. (A-Max IV supports CD-ROM drives as well.)

You can read Macintosh high-density disks directly while running the emulation. A-Max IV won't read the old Macintosh 800K low-density format directly, but the included Disk Transfer program will copy the disks into a file that can be mounted as a fake disk while you're running the emulation. While this isn't as convenient as being able to read the disks directly, it beats Emplant, which requires additional hardware to read low-density disks.

A-Max IV
ReadySoft
$499.95

Minimum system: 68020, 4MB fast RAM, Workbench 2.1, hard drive.
Recommended system: 68030 or faster, 8–12MB 32-bit fast RAM, Workbench 2.04 or later, 24-bit video card, high-density floppy drive.

Screen Display

You can display Macintosh video on any screen mode supported by the graphics chips in your Amiga—up to 800x600 in 256 colors on the Amiga 4000. You can get 24-bit displays or higher resolutions using an add-on video card; A-Max IV supports the Picasso II, Retina, and GfxBase cards. A unique feature is the ability to open large, scrollable virtual screens. To run QuarkXpress, I regularly use a 720x1024-pixel screen that lets me scroll to the bottom of a full-page document much more quickly than by using the scroll bars on a standard 480-line screen.

The Macintosh is unique in that it supports simultaneous display on multiple monitors; A-Max supports this as well. If you have two monitors and a graphics card, you could, for example, place all your PhotoShop tools on a fast, four-color screen on the Amiga side and the picture you're editing on the slower, 24-bit Retina display on a second monitor. You do not, however, need a graphics card or multiple monitors to take advantage of this feature; instead, you can open multiple screens on the Amiga monitor—in different resolutions and color depth—and easily move between them.

A-Max File Transfer can copy individual files or entire directories between Amiga and Mac hard disks. Text and PostScript options translate text line endings for the appropriate computer, while the less useful MacPaint translation option converts between MacPaint pictures and two-color IFF images. Finally, MacBinary translation allows you to transfer Mac files you've downloaded using Amiga terminal programs to the Macintosh side, using the MacBinary information to make sure the Mac's information forks are retained.

Both A-Max IV and Emplant can transfer text between the Amiga and Mac sides of the computer using the system clipboard. Just make sure that the Finder is the active program on the Mac side, and you can copy and paste between your Macintosh software and any Amiga programs that use the standard system clipboard. Note that this capability works only for text; graphics and other data can't be transferred via the clipboard.

Both products support AppleTalk/LocalTalk serial networking, but A-Max IV has the advantage of also supporting Ethernet through Commodore A2065-compatible SANA II networking cards.

Emplant

AS MENTIONED ABOVE, Emplant is marketed as more than just a Macintosh emulator. By the time you read this, Utilities Unlimited hopes to have shipped its $100 486 emulator add-on for the board—a software and logic upgrade that will let an Emplant-equipped Amiga run MS-DOS, Windows, and OS/2. Further down the line, UU has promised emulators for older computers such as the Commodore 64 and 128, Atari 800, and Apple II. For the purposes of this comparison, though, we'll just look at the Macintosh emulation.

Like A-Max IV, Emplant is a Zorro II card. The system requirements are similar: at least a 68020 processor, AmigaDOS 2.04, 4MB of fast RAM, a hard drive, and an open expansion slot. You'll also need a copy of Mac System 7.1 and a 256K ROM chip from a Macintosh II, IIx, or IIcx. Originally, these chips were very expensive—$250 and up—but UU recently added support for first-generation Mac II ROMs without high-density floppy-drive support (Emplant adds its own support for these drives); these ROMs can be found for well under $100.

The board is available in four models: Basic, which includes just the emulation hardware; Option A, which adds two eight-pin, RS-422 Mac serial ports; Option

B, which adds a Macintosh-compatible SCSI controller; and Deluxe, which includes both serial and SCSI support. The extra options enhance the Amiga side, as well. Drivers are included for using the Emplant serial ports as extra Amiga serial ports and for mounting AmigaDOS devices on the SCSI controller. Emplant supports the Amiga serial and parallel ports for printer and modem connections if you don't select the serial option.

The SCSI controller doesn't autoboot, so you won't want to use it as your primary hard-disk controller. Also, at press time the SCSI controller had problems working with some Amiga 4000s, but UU assured me this would be fixed by the time you read this. As with A-Max, for storage Emplant lets you use partitions on Amiga drives, special hard files on Amiga partitions, or dedicated Macintosh SCSI drives. The SCSI option is hardware-compatible with the SCSI controller in real Macintoshes, so it's more compatible with fast-moving multimedia titles than A-Max's Amiga SCSI support. While Emplant can read high-density Macintosh disks without problems, you'll need to add a UU AMIA board and a real Macintosh disk drive to read low-density disks.

Superior Video Support

Emplant has much better video support than A-Max IV. In addition to Picasso and Retina, Emplant supports the A2410, EGS, Merlin, OpalVision, Piccolo, Rainbow 2 and 3, Retina Z3, Visiona, and Vivid video boards. Video updates are much faster than under A-Max, and they are dramatically more compatible. Whereas A-Max wouldn't run any of the games (SimLife, Falcon MC, Spectre VR, F-18, and Star Trek: 25th Anniversary) I threw at it, Emplant had no trouble with them at all. And while the above-listed video boards will generally speed screen output and add 24-bit support, even Emplant's AGA video was fast enough to play most of these games without the use of one of these boards. Like A-Max IV, Emplant supports multiple monitors and screens; it does not, however, support every screen mode, and it lacks A-Max IV's ability to open large, scrolling virtual screens.

File transfer has been greatly improved over early versions. The latest releases include the MultiOS file system, which lets you access Macintosh and MS-DOS disks directly from the Workbench and CLI. No more tedious moving of individual files from the Amiga to the Mac side—just drag and drop. The current file-transfer options automatically handle MacBinary and ASCII translation. A coming update will add provisions for automatic file conversion upon copying, so you could, for example, automatically convert an ANIM5 animation into QuickTime format as you copy it.

Emplant falls behind A-Max IV in only two areas—low-density disk support (mentioned above) and memory allocation. A-Max IV requires you to allocate about 2MB of RAM to the Macintosh side, and then dynamically allocates free memory as programs need it. By contrast, with Emplant you must set aside a certain amount of RAM exclusively for the Mac side as you launch the emulation. UU says this increases compatibility, but it means you may have to shut down the Mac side, adjust the amount of memory allocated, and relaunch the emulation if you need more RAM on the Amiga side.

The Final Score

THERE IS ONE group of people for whom A-Max IV is the clear choice—owners of earlier versions of A-Max. If you have A-Max II Plus, for example, the upgrade to the full-color A-Max IV is very inexpensive. Even if you have an old A-Max cartridge, you'll still get a discount on the A-Max IV purchase and you can reuse your old ROM chips. Also, if you're primarily running productivity applications and working with large bitmaps or pages, A-Max IV's virtual screens might increase your productivity enough to make it the emulator of choice.

If you're starting from scratch, however, Emplant has enough advantages to warrant serious consideration. Although both emulators perform at speeds similar to those of a Macintosh with the same type of microprocessor as your Amiga, Emplant has much faster video support. It is also much more compatible with games and multimedia titles, and it's quite a bit faster in running math-based programs such as Excel.

Of special note is Utilities Unlimited's constant and consistent updating of the Emplant software. Releases with new features and bug fixes appear about once a month. The early bugs and complaints have all been addressed, but developer Jim Drew keeps adding new capabilities to the emulation. If you have a modem, the updates are available free-of-charge from UU's BBS, and from the online networks for the cost of a download. A-Max IV was upgraded to fix A4000 compatibility problems, but no new versions have appeared since. ReadySoft offers telephone technical support. UU does as well, and it also offers support on GEnie, CompuServe, and the Internet, with the board's developer checking in daily to answer user questions.

If you have an earlier A-Max product, the A-Max IV upgrade makes a lot of sense, and will perform admirably for productivity applications. If you're starting from scratch, though, Emplant offers the most compatible emulation and the promise of new capabilities to come. ■

Emplant
Utilities Unlimited
Basic Board, $279.95; Option A (two serial ports), $349.95; Option B (SCSI adaptor), $349.95; Deluxe (serial and SCSI), $399.95.

Minimum system: 68020, 4MB fast RAM, Workbench 2.04, hard drive.
Recommended system: 68030 or better, 8–12MB 32-bit fast RAM, Workbench 2.04 or later, 24-bit video card, high-density floppy drive, AMIA interface and Macintosh floppy drive.

Denny Atkin is an associate editor at ***OMNI Magazine*** *and author of* ***Denny Atkin's Best Amiga Tips and Secrets****. Send your comments and suggestions to him via e-mail at DennyAmiga@aol.com.*



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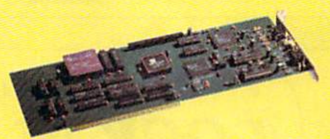
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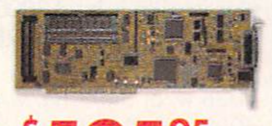


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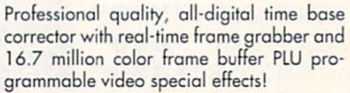
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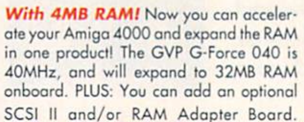
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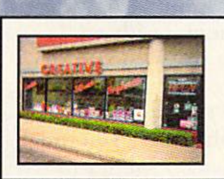
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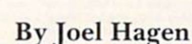
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Display Tips for Gallery Exhibition

69

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.



By Joel Hagen

FOR A COMPUTER artist, getting your work into a gallery show can be as challenging as creating it in the first place. Let's explore some creative ideas (perhaps more along the lines of sculpture than print) that might help you break into exhibition. For the moment, we'll ignore the content of your computer work and focus on physical display aspects you can control as an artist to create an effective gallery exhibition.

Composing Your Components

The first and simplest thing you can do to dress up a gallery display is to feature the computer itself as an art object. Place it on a clean, painted pedestal as though it were sculpture. On the other hand, you could conceal the CPU inside a pedestal, and then showcase the active monitor on top. In either case, cables can feed through a hole in the pedestal to the computer. One or more pedestaled monitors arranged like this in a gallery setting can have a powerful effect on the senses if the lighting is well handled. I have found it best to have very low ambient light in the area and use tight, soft spots aimed from the ceiling to fall on the top rear of each stand. This avoids having any light strike the monitor face and preserves a brilliant screen while giving presence and focus to each display.

The trick to all of this is to think at three levels. First, plan the artistic content of what the computer is showing the audience. Second, and just as important, think of an effective display of the computer itself as an object of interest just as though you were arranging a group of "ready-mades" for exhibition. Instead of soap boxes or basketballs, you are displaying monitors. Third, think of the entire gallery space—the layout of the room, how you want traffic to flow through the exhibit, the lighting, the music, and all the other details. It is the composition of the room itself that will hit the viewer first and set the initial impression.

Beyond these gallery fundamentals, there is a lot you can do with the monitor itself. The Amiga has always been "video-friendly," and with a little imagination you can capitalize on that for sculptural displays. Instead of a standard monitor, think about running the display through a television set. The trend in displaying computer graphics is to always seek bigger, brighter, higher-resolution true-color displays. However, think instead of trying a choppier, low-resolution display for some projects. Vintage black-and-white TV sets picked up at thrift stores or yard sales for a few dollars can be a real novelty in a genre where the audience expects the latest technology.

Of course, not every project lends itself to lo-tech display, but consider it an option. Most Amigas have at least a black-and-white AV plug in the back from which you can play a video signal into any TV with AV inputs. For older TV sets (or newer Amigas with no video output) try the trusty A520 video adapter to feed video and audio straight into any TV through the antenna input. Using the A520, you can add an inexpensive video splitter to run multiple sets from the same video source. This opens up the possibility of arranging a cluster of interesting old TV sets facing in different directions for display. That arrangement can become quite sculptural.

The Rage: 2-Bit Encrusted Display Devices

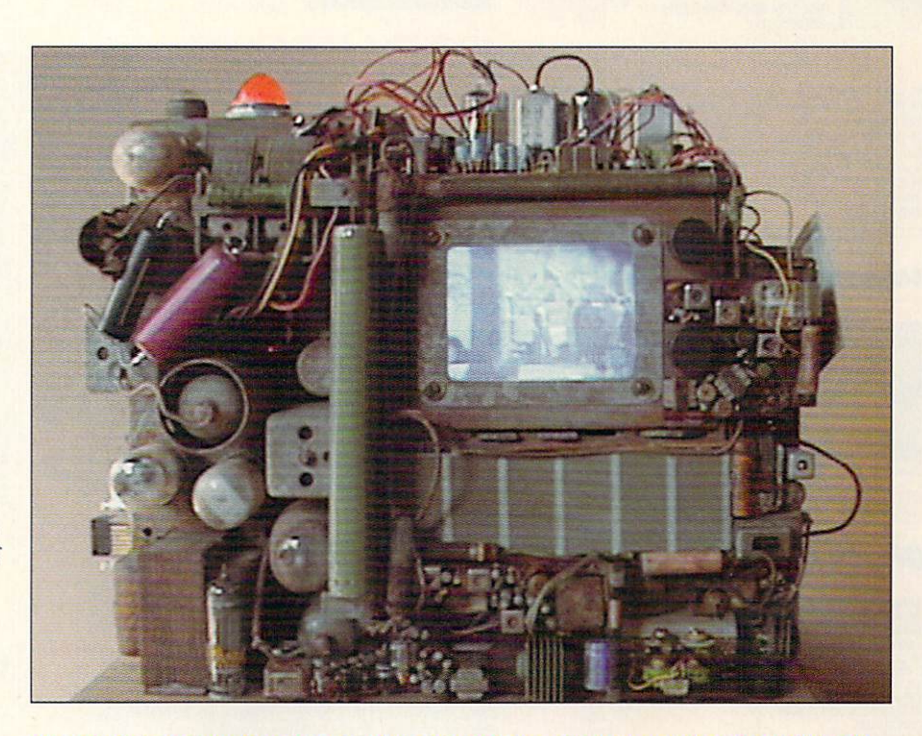
For an even more interesting look, try building a display device. The accompanying illustration shows a viewer I made for a recent exhibition. You don't have to be Mr. Wizard to build such a contraption. Most of what you see is nonfunctional. I bought a small $50 TV set at the local

How you physically present your computer art can be as important as its content when it comes to getting exhibited—so save some creativity for your displays!

drugstore and encased it in old electronic junk from my scrap bins. On the 4-inch screen, 16-color grayscale images are crisp and sharp. Because of this, there is low storage overhead for pictures and animations. Impressive presentations can be run from even a single floppy.

To build something like this, use a hot-glue gun (available at any hardware store) and encrust any little TV set with old radio parts, circuit boards, model kits, wires, and so on. I protected part of the TV screen with masking tape and spray painted the set to blend it in with the rusty radio tubes. If you have any skill with electronics, it is easy to add a few LEDs here and there that run from the same power source as the TV. These spots of light make the fake components seem functional. Be very cautious, however, about exploring any old electrical devices, as there can be dangerous voltage lurking in some components even if no power is present.

The viewer you see in the illustration was part of an assemblage sculpture that included old books, my ceramic skulls of alien creatures, dusty chemical bottles, star charts, and so forth. The concept of making the computer part of a larger sculptural context can be visually powerful and may open gallery doors more easily than a simple display of a few computers and monitors. If you use your imagination, there are hundreds of ways you can disguise a TV set or computer monitor to look like something far more interesting.



No, this is not an Amiga 9000 monitor, but rather a small TV set disguised with old electronic components. Using an A520 video adapter, the author has made it the display device for an Amiga 4000 concealed in the base of an assemblage sculpture.

Projections, Reflections, and Other Neat Illusions

Video projectors offer other possibilities. You can rig them for rear projection to get a huge display that can itself be integrated into a larger context. You can use combinations of mirrors to "pipe" a projected video image through a sculpture for an added illusion of depth at the final point of view. For example, project the display sideways behind the length of a display, then reflect it up and out to a rear projection surface for the audience. You can also project images onto a three-dimensional surface or even a moving object for interesting effects.

Speaking of mirrors and reflections, you can create interesting displays by having a monitor facing up from floor level, hidden from the viewer. Its image can be reflected to the viewer from an angled piece of glass incorporated into the display. The advantage of glass over a mirror is that a person can also see other display elements that lie directly behind the angled glass. Careful lighting and placement of the two displays can create some intriguing illusions in which reflected elements seem to float in space over the second display. One of the monitors can even display live a video feed from a camera trained on the spot where a person must stand to view the exhibit. This can add immediacy to a sculpture and remove some of the distance we often associate with computer art.

The possibilities for interesting displays are endless once you break away from thinking only about what is seen on the monitor and think instead about the overall physical exhibition. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

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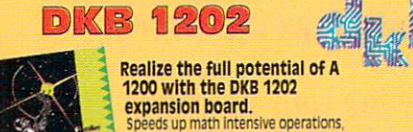
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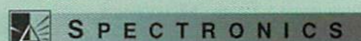
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BEAVERS CD32	39	REACH OUT FOR GOLD CD32	39	THE FIRM CD-I MOVIE	29	IMPOSSIBLE MISSION AGA	35	INDIANAPOLIS 500	15	CANNON FODDER	37	PINBALL DREAMS/FANTASY COMBO	44
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CHAOS ENGINE CD32	39	SIM CITY CD32	24	WORKS FINE ON CD32, MAY REQUIRE A MOUSE OR KEYBOARD		OVERKILL AGA	14	MEAN ARENAS	14	CRASH DUMMIES	25	SECOND SAMURAI	27
D/GENERATION CD32	34	STRIKER CD32	39	THOMAS SNOWSUIT	10	RYDER CUP GOLF AGA	33	MORPH	14	DARK SEED	45	SENSIBLE SOCCER	29
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DONK THE SAMURAI DUCK CD32	39	TROLLS CD32	39	TOWN WITH NO NAME	10	TORNADO AGA	49	PINBALL FANTASIES	24	F17 CHALLENGE	19	SKID MARKS	31
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FRONTIER:ELITE 2 CD32	39	WINTER SUPER SPORTS CD32	39	HOUND OF THE BASKERVILLES	10	ALIENS 3	10	ROAD RASH	17	FRONITER:ELITE 2	33	STARDUST	24
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LEGACY OF SORASIL CD32	39	CONE HEADS CD-I MOVIE	29	DENNIS THE MENACE AGA	14	CYBERCON III	10	WORLDS OF LEGEND	15	INTELLIGENT STRATEGY GAMES	17	TOM LANDRY FOOTBALL DELUXE	29
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LOST VIKINGS CD32	39	FROM RUSSIA W/LOVE CD-I MOVIE	29	LIBERATION:CAPTIVE 2 AGA	24	DARKMERE	17	ANCIENT ART OF WAR IN THE SKIES	39	JURASSIC PARK	31	TRIPLE ACTION 4-BLUES BROS.	21
LOTUS TRILOGY CD32	39	GOLDFINGER CD-I MOVIE	29	NAUGHTY ONES AGA	14	DEEP CORE	27	APIDYA	19	K240	32	UFO DEFENSE	44
MEAN ARENAS CD32	39	HUNT FOR RED OCT CD-I MOVIE	29	NIGEL MANSELL AGA (BAGGIE)	10	DISPOSABLE HERO	14	ASSASIN SPECIAL EDITION	19	KINGMAKER	44	VAL HALLA	44
MICROCOSM CD32	49	INDECENT PROPOSAL CDI MOVIE	29	TROLLS AGA (BAGGIE)	10	DOGFIGHT	22	ATRAIN CONSTRUCTION BUNDLE	44	KINGS TABLE	28	WALKER	19
MICROCOSM/CHAOS ENGINE/DIGGERS	59	NAKED GUN 2 1/2 CD-I MOVIE	29	ZOOL AGA (BAGGIE)	10	DONK THE SAMURAI DUCK	22	AWARD WINNERS 2	34	LEGACY OF SORASIL	31	WAR IN THE GULF	19
MORPH CD32	39	PATRIOT GAMES CD-I MOVIE	29	AGA SOFTWARE LISTING		F117A STEALTH	27	BATTLE ISLE 93	33	LEMMINGS 2	30	WHEN TWO WORLDS WAR	44
NAUGHTY ONES CD32	39	PLANES, TRAINS, AND AUTO CD-I	29	ALIEN BREED 2 AGA	37	FATMAN	10	BATTLE TOADS	23	LORDS OF TIME	19	WINTER OLYMPICS	40



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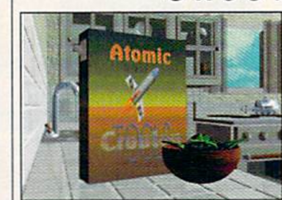
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Video Toaster User 20 Products NAB 1994

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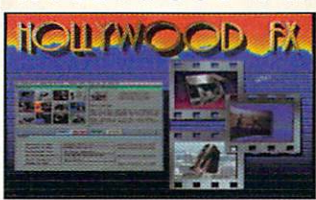


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Hollywood FX creates amazing 3D effects for video and interactive productions, using Lightwave for the highest quality rendering.

Includes dozens of effects including multiple full motion video windows, 3D morphing transitions, particle effects and more. New libraries of effects will be available on a regular basis!

Make your Toaster create video effects that rival Abekas and ADO systems–at a FRACTION of the COST! PAR users get the added benefit of being able to map video or animated sequences directly onto objects in their Lightwave scenes without exporting first to a large hardrive. Hollywood FX exports an unlimited number of sequences from the PAR as needed.

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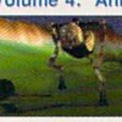
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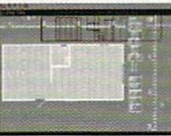
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NEWEST DISKS

VO13: Toaster Textures reflection maps, bump maps, surfaces and scenes for LightWave.
VO12: MainActor - Animation processor. Reads/writes/converts many animation/picture formats and supports many graphics boards...very nice!
WB146: ImageKnife Loads IFF, JPeg, GIF images, with manipulation like rotation, noise, filters, halftoning, pixelizing, edge detection and more. Requires Workbench 3+
WB145: Big Dummies Guide to the Internet An interactive AmigaGuide to the information highway and how to tap it!
WB144: Molecule CPK renders space filling representations of atoms and molecules. Req's WB3.0+ & Hard drive.
WB143: ViewTek THE definitive display utility. Versions included for Amiga, DCTV, EGS, FC24, Picasso, Opalvision, Retina, IV24. Also includes new MakeAnim7 utility.
WB142: JCGraph A beautiful graphic package...pie charts, 3D charts of all types...exports EPS, IFF & Draw2000 formats!
WB141ABCD: Amiga Verse Search The Authorized 1611 King James Bible...online! Complete cross-referencing to all words is included. Requires WB1.3+ and 2 floppy drives.
WB140: Mr. Backup A powerful hard-drive backup utility with full tape-drive support. Formally commercial! Req. WB2+
FD102AB: StarWolds - A fun action/adventure shoot-em-up with killer graphics--based on the Star Wars saga. Req 1MB Chip RAM for PAL Mode.
FD101: WipeOut/Defender Defender is a virtually perfect clone of the original. Wipeout is a multi-scrolling shoot'em up with great graphics and smooth animation. Requires 1MB
FD100: Pengo II A clone of the original coin-op classic. Requires 1MB chip RAM for PAL mode.
FD99: The Shepherd A killer Gods/PowerMonger clone...great graphics and sound effects! Requires 1MB.
FD98ABC: Klondike AGA - Solitaire a'la outstanding hi-res AGA graphics! Runs in multiscan or any PAL screenmode.
FD97: Bonanza - Battlesheep–a battleship game. Tanx'n'Stuf-seek and destroy in a cool 4-way scrolling world. MileStones–play Mille Bournes against the Amiga and Galactoid–a galaxian type game.
FD96: Tetris Duel AGA - The next generation Tetris..2 players can play head to head and sabotage each other! Great graphics for AGA machines! Req's A1200 or A4000.
DD93: Magic User Interface Greatly speeds development. Auto Screen/Window/Font sensitive interfaces and *much* more!
DD92: Developer Contains the official Commodore developers kits for the AmigaGuide and Commodore Install Utilities...a must have for all serious developers.

FUN DISKS

FD7: Pacman - This disk contains several pacman type games including: PacMan87, MazeMan and Zonix.
FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One,VideoPoker and more.
FD12AB: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

DD83: IBM - Not one, but *TWO* IBM emulators that will allow the running of MS-DOS software *with* Amiga programs!!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives. Also, check out our PC-Task emulator on our DevWare Video page!

FD13: Board Games - Monopoly, Dominoes, and others.
FD17: Educational Games - This disk includes several games for youngsters including geography, math, science, and word games, also includes Wheel of Fortune.
FD20: Tactical Games - MechForce; A game that simulates combat between two or more giant robots. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.
FD33: Arcade Games - Ffreddy a Mario Brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.
FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

WB105AB: Workbench 2+ Extras #2
This set contains the programs that should have been included with WB2+. These powerful utilities take full advantage of the many new capabilities that are available in Workbench 2+. Includes: Tool Manager - a wonderful utility to add programs to your TOOL menu, Virus Protection - Degrader, Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files. Bitmap Font Editor, Screen Blankers - ala fractals and spiners and swarming bees! Requester Enhancers and CPUBlit. Two disk set, counts as two.

FD39A&B: Star Trek, The New Generation - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Excellent!!! Counts as two disks. Requires 512k
FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

THE AMIGAWORLD "BEST-OF" SET
FD85ABCD: AmigaWorld's Best - These four disks contain the *hottest* p/d games! Includes Mother Lode, Moria, Minefield, Poing, Intruder Alert, Deluxe PacMan, Rocky and Super Artillery (see Dec. '92 AmigaWorld) Four disk set, counts as three.

FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores and addicting gameplay. Gravity Attack is a psychadellic trip through several different worlds—each different.
FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatible printer.
FD61: Games - Solitaire; great graphics, plays two versions. Klide; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.
FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Req. 1 megabyte of memory.
FD67: Arcade - Includes Llamatron a well-done 'Robotron' clone. Hate is a "terrific" Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!
FD69: MindGames - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.
FD73: Arcade Series - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.
FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!
FD75: Arcade Series - Descender is a clone of the classic arcade game "Tempest"; complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks—incredibly well done! Search is a maze game unlike any other—included is a level editor too. (Tanx requires 1 meg chip memory=Fat Agnus)
FD77: Arcade Series - Galaga'92 is a clone of the arcade game with several gameplay enhancements--with smoooth, sharp graphics. it's better than the original! Pharaohs Curse is a clone of the original C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered!
FD81: SuperGames - Some of *the* best games--Donkey Kong is better than the original *with an extra level!* Frantic Freddie and TrailBlazer are both fast-paced arcade games. Mad Bomber is the classic game of "Kaboom" redone with an Amiga flare. All of these games are excellent!
FD82: Intrepid - In the Arctic ice, you control a tank on a mission to rescue hostages in this superbly crafted Amiga original.
FD84: Games! Deluxe PacMan is better than the original--20+ mazes, special "power-ups" with *custanding* graphics. ThinkAmania is the classic game of concentration--with *beautifully* drawn HiRes images.
FD86: UChess: The strongest playing Chess program available for the Amiga period. Req. 68030+, Workbench2+, 4MB RAM or more. Supports AGA (req. 8MB!)
FD87: OXYD- A commercial quality game similar to Marble Madness in many ways, but allows two computers to link & play together...see how many of the 200 landscapes you can complete without having to get the hint book!
FD88: AmyBoulderdash - a clone of the original classic.. extremely well done complete with level editor, 2 complete sets of levels and a level editor. Requires Workbench 2+.
FD89: Kastle Kumquat - A thoroughly entertaining and challenging maze/adventure game. Great soundtrack and graphics. Req's 1MB Chip RAM (for PAL mode).
FD90: Conquest & Dominion - Conquer the known world and maintain dominion over it--a microcosm of economic survival.
FD91: Popeye - A clone of the original C-64 classic--Amiga style with enhanced graphics. Req 1MB chip RAM for PAL.
FD92: Blast'em - contains Scorched Tanks--a tank battle with futuristic weapons/defenses & "great" graphics. Galactoid is a Galaxian/Space Invaders game completely Amiga-tized.
FD93: MegaBall AGA - This is the one you've been waiting for! Updated to knock your socks off! THE best p/d game for the Amiga. Req.'s WB2+ & 1MB RAM. Show off that AGA!
FD94: Scorched Tanks - completely updated and compatible with AGA/3.0! 60 different ways to blow each other away! An outstanding game of angles, trajectories & unique arsenals!
FD95: Deluxe Galaga - You should be paying $40 bucks for this one! All kinds of power-ups and silky smooth motion. Req's 1MB Chip RAM (Fat Agnus) for PAL Mode.

WORKBENCH DISKS

WB4:Telecommunication - This disk contains several excellent pd communication programs: Access 1.42, Comm 1.34 & Handshake 2.12a. See also WB102 & WB115.
WB5: Fonts #1- 35 bitmap fonts. Also included are five PageStream fonts,and ShowFont - a font display program.
WB6: Fonts #2 - ShowFont allows you to quickly and painlessly view all 256 characters in a typical font. Includes large AmigaDos system fonts (many up to 56pts).
WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.
WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.
WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!
WB13AB: Printer Drivers and Generator - over 70 different drivers (including HP LaserJet 3 & 4!), also includes a printer-driver generator. Two disk set counts as two.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.
WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.
WB23: Graphics and Plotting - Plot, a 3-D mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map IFF image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere.
WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

SPECIAL PRODUCT • NEW RELEASE!!
QT3: THE A64 PACKAGE *VERSION 3* - A very complete Commodore 64 emulator. Supports any CPU and is fully compatible with WB1.3 & 2.0 and now 3.0! This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your parallel port of your Amiga for total emulation. All-new transfer software! Special price $59.95 -with hardware.

WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.
WB35: 3D Graphics - This disk contains 3Fonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, World3d - a demo of a front end for use with DKBRender.
WB36: Graphics - On this disk are several programs to create stunning graphical images including. MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!
WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15
WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Req. 1.2 MB
WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dadads ,...), people, & transportation.
WB47: Clip Art - Hires clip art. Motifs - hair, drafting, summer, animals and macfood.
WB48: Clip Art - Hires clip art. Motifs - Holidays, music, medical and misc.
WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings..., and surreal images. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...
WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and more.
WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route from one city to another, highway description included. Diary - a diary program like "Dougy Houser M.D". Cal - a calendar program, Magman - a database tailored for articles and publications.
WB57: Animation - This disk has several "Demo" animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenomorph.
WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.
WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, and forced disk validation of corrupt disks.
WB66: Icons #2- Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.
WB69: Music - 90 minutes of classical and modern electronic music for you Amiga.
WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss)
WB79: Home & Business Accounting - Includes Ckbacct - a checkbook balancer, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB119ABCDE: Font Set This collection contains over 100 typefaces for use with Professional Page,PageSetter 3+ or PageStream 2.1+. These fonts will output to any laser printer or dot matrix printer with no jaggies, thanks to outline fonts. Very pro-looking! 5 disk set, counts as 4.

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.
WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, & Mechanix. 2 disks, counts as 1.
WB93: Workbench 1.3 Extras #2 Contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurubuster)and PrintStudio.
WB95: Checkbook Accountant 2.1 - Definitely commercial grade; we've seen many checkbook programs and this is the best. Full budgeting, transaction recording & report generation.
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WB118: Amiga Beginner - *You asked for it!* A complete tutorial for the beginner on using the Amiga. Starts you off at the power-switch and takes you through to the CLI/Shell and all points in between. *Bonus!* Also included are 16-color icons to replace *every* icon in your 2.0+ Workbench.

WB121: ProPage3/4 Enhancer - This disk contains over 40 "Genies" for use with ProPage 3+, including useful ones like Make Pie Chart and Resize Text to fit Box to name a few. Also includes structured & bitmap clipart for unique borders...a *must have* for all PPage 3 users.
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WB123AB: Flags of the World - same as WB124, but for Workbench 1.3. Req. 1MB. 2 disk set, counts as two.
WB124: Flags of the World - Two modes: click and learn or a game to test your knowledge. Great graphics--fantastic learning tool. Has current Russia & Yugoslavia republics. Req. Workbench 2.0+ & 1MB RAM.
WB127: Blankers - Over 20 different screen blankers. Most run on Workbench 1.3+...a few require 2.0+
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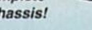
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From p. 9.
them out. Save for the A4000 and a limited number of A3000s, Amigas were equipped with low-density disk drives. If you could plug a high-density drive into your older Amiga, it would greatly increase its capabilities.

Since a high-density drive can read and write to both low- and high-density disks, you can pop any Amiga-formatted floppy into it without a second thought. Also, with the appropriate hardware or software utilities in place, copying files from MS-DOS and Mac-formatted disks is no different than using Amiga disks. Again, just pop it in the drive and copy to your heart's content.

Driving the "High" Way

DKB's Power XL Drive is a high-density floppy-disk drive that delivers this type of convenience. With a slim, low-profile design, this metal-cased disk drive is housed in an attractive beige case that matches newer Amigas quite nicely and performs as well as it looks.

Installing the XL Drive is nearly a plug-and-play process. Plug the drive's cable to the drive port on the rear of your Amiga and place its accompanying XL Install disk in any drive. The Install software gives you two options: a Standard or an Advanced installation. Going with the Standard installation writes a file called "highdensitypatch" to your Workbench's C directory and a line to your User-Startup so that the operating system can recognize high-density disks inserted into XL.

You'll want to opt for the Advanced installation if you have a need to read and write high-density PC-formatted disks. You'll need both Workbench 2.1 or later and the copy of Consultron's CrossDOS that comes bundled with the OS. Substituting the freely distributable program MultiDOS in place of CrossDOS won't work, although MultiDOS works fine with low-density MS-DOS-formatted disks.

After installing either the Standard or Advanced version of the software, you'll find that using the XL is largely a transparent process. I used the drive extensively on my A4000/040 and didn't encounter any problems. Plugging it into an old 2.1-equipped A2000, however, required jumping through a few hoops and some initial acknowledgement of its presence. This consisted mainly of carefully installing the software and keeping the stack of AmigaDOS-formatted high-density disks separate from the low-density disks, as the A2000's internal drive is a low-density one.

A switch on the rear of the drive allows you to select a protect mode that prevents the XL from formatting disks; you'll be able to delete files, though, with the switch in the no-format position. If you can't seem to format a disk in the XL, always check the position of this switch setting.

There you have it: a powerful, versatile drive that does most anything you'd expect it to do. Whether you're already using an internal high-density drive or not, the XL is a nice complement to just about any Amiga.

—***Tim Walsh***

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Powerful game-development tools for the Amiga.

The GameSmith Development System (GDS) is a set of tools designed for writing games in C or assembly language. It frees you from worrying about the gritty details of animations, collisions, sounds, and having to reinvent the wheel with numerous programming details. You also needn't concern yourself that the finished version of your Amiga game will work with the version of AmigaDOS you intended for it—all routines have been tested with many different configurations.

Extra-Large Developer

The GDS includes five disks of files. Two files form the core: a standard Amiga-link library and a sophisticated object tool. Three of the five disks are filled with example programs that use GDS, including one complete game and some impressive demos. The remainder of the disk space is occupied by include files and a utility (with source code) for encrypting and decrypting sound and graphics.

The documentation for GDS fills more than 325 spiral-bound pages, and is split into three parts (User's Guide, CITAS and Library Reference), each one individually indexed. Unfortunately, there is no master index. If you've read the Amiga ROM Kernel Manuals (RKMs), you'll be right at home with the GDS manual. The Library Reference is similar to RKM: Autodocs & Includes, while the User's Guide is similar to RKM: Libraries.

The CITAS section of the manual describes the use of the CITAS (originally an acronym for "Convert IFF To Assembler Source") object tool. Although there are no tutorials, it provides a well-written and clear reference. Don't expect a quick glance at the manual to suffice; you'll have to browse through include files and scour the example code in order to fully understand GDS. If you've sought freely distributable source code and a more narrative introduction than that provided by the RKMs, you'll probably wish for the same with GDS.

Image Handling

The link library is about 92K, not all of which is necessary for your programs. Included are functions to manipulate displays, backgrounds, graphics, animations, sound , timers, joysticks, and most of the other commonly programmed items. Automatic collision detection provides system calls to your custom collision handler.

The CITAS object tool lets you load images and animations created in your favorite paint program. You can manipulate the ANIM cells through copying, repositioning, rotating and flipping, and can set options for translucency, CPU or blit images, display priority, and a number of other parameters. You can even create complex animation objects by combining several simple animations.

CITAS lets you define sophisticated collision tables and areas. A collision table is a list of names and masks. You might have names such as "head," "foot," and "sword," and a mask that indicates that two feet or two swords can't collide with one another, but that they can collide with anything else. A collision area is a rectangular area that you define graphically, and then label from within your collision table. When you're finished, CITAS saves your objects as C or assembler code, or as separate files to load into a game of your own design.

GDS is fairly system friendly. I did, however, notice Enforcer hits when the computer was running low on chip memory or loading large images, but not while it was running the demos.

Game Over

Professional game developers use their own custom development systems, often

Continued on p.48.



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Software Specials

Quantities are limited on these hard to find items.

AMOS Pro	$45.00
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Carmen San Diego - Time	32.95
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A600 Keyboard	$29.95
A2000/A3000 Keyboard	69.95
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A3000 Internal Floppy Drive	69.95
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Amiga 4000/040 & 4000/040 LC

Units still in stock. Call for pricing & configuration.

3.1 OS Kits

NOW AVAILABLE!

AS320 3.1 Kit w/complete Manuals, Disks, & ROM for the A500, A2000, & A2500
$159.00

AS330 3.1 Kit w/complete Manuals, Disks, & ROM set for all A3000 models
$179.00

AS340 3.1 Kit w/complete Manuals, Disks, & ROM set for all A1200 & A4000 models
$179.00

The 3.1 OS Kit includes the following new features:

- New screen modes & improved support for graphic boards (e.g. Picasso 2 RTG with up to 1600x1200 pixels in 256 colors)
- Significantly accelerated graphics rendering by rewritten graphics and layers libraries
- CD-ROM support (including CDXL), reads standard ISO9660 CDs (including PC data and picture CDs)
- Support for foreign languages via locale.library (English, German, French, Italian, Swedish, Norwegian, ...)
- Datatypes for auto-detection of filetype for images, animations, sound, text, hypertext (AmigaGuide), ...
- Viewing/Playback of various files with MultiView and Datatypes
- On-line help system using AmigaGuide
- Improved Graphical User Interface with easier color selection and more flexible color assignment (Pen Sharing)
- Support for MS-DOS and Atari disks (720Kb and 1.44Mb with High Density floppy drives)

NOTE! When using the 3.1 Kit with an A1200 you will lose the capability of adding any PCMCIA cards to the port.

A500 /A1000 Peripherals

BigFoot 200W P.S.-A500-600-1200	$84.95
Commodore A500 Power Supply	44.95
A500 Case complete w/shielding	23.00
A500 Internal Replacement Drive	44.95
A500 Keyboard	29.95
AIR External Floppy Drive	89.00
A1000 Case w/Shielding	29.95
A1000 Motherboard	49.95
A1000 Daughterboard	24.95
A1000 Power Supply	39.95
AIR A1000 Internal Floppy Drive	69.95

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A2000 300W Power Supply	$149.00
Emplant Deluxe Emulator	369.00
256K HD MAC ROMS for Emplant	289.00
486DX Emulation for Emplant	95.00
FastLane Z3 SCSI-2/RAM A3/4000	499.00
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A2065 Ethernet Board — NEW & Bulk Packed. CBM's Last!	269.00
A2091 SCSI Controller — w/Rev 6.6 Eproms	89.00
A2630 25Mz Accelerator — NEW, 68030, w/4Mb RAM, & Rev 7 Eproms	429.00
A2232 Multi-Serial Card — NEW, bulk packed 7 port serial card from Commodore, with software	195.00
Serial Cable for above	7.95

SX-1

SX-1 CD-32 Expansion Module by Paravision In Stock!: $239.00

SX-1 Keyboard: $44.95

Options:
1Mb RAM $49.95 - 4Mb RAM $165.00
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CD-32

We have acquired the last batch of CD-32s in the U.S.A. These are GENUINE U.S. machines, NOT IMPORTS as others are trying to sell.
$369.95

NEW & boxed w/all manuals & cables, 90 Day W'ty. Complete w/Chaos Engine & Microcosm. Can't find an A1200? Why not consider a CD-32 with the SX-1 module above. Call for details.

A1200 Peripherals

CSA 12 Gauge 50Mz w/SCSI	$499.00
PCMCIA Card 600/1200 2Mb	135.00
PCMCIA Card 600/1200 4Mb	229.00
IDE Cable & Software - 600/1200	20.00
M1230 Accelerator 33/33/0	275.00

WB2 Upgrades

2.1 Software & Mastering AmigaDOS Reference Manual	**$40.00**
2.1 Software & Mastering AmigaDOS Reference Manual & 2.04 ROM	**72.95**
Multi-Start 2 v6A 500/600/2000	34.00
AS216 2.1 Kit from Commodore	54.95
AS216 2.1 Kit w/2.04 ROM from CBM	86.95
AS314 2.04 A3000 ROM set w/2.1 software	59.95

Modems & Networking

AmigaLink Starter Kit - 2 Nodes	$259.00
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A2060 ArcNet Board	69.95
GP Fax Software - Class 1 & 2	59.95
Sporster 14.4 Fax Modem	179.00
Supra Fax/Modem 14.4	209.00
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We stock all 2.5 IDE, 3.5 IDE and SCSI Hard Drives. Call for models and pricing!

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Electrohome C1440 Multiscan	$499.00
CD-1401 Multiscan	499.00

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Pegger 2.0	59.95
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Power Macros/Lightwave	109.00
SAS/C 6.51	159.95
Scenery Animator 4.0	65.00
Studio Printer	69.00
Super HP-DJC 3	37.95
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Syndesis 3D ROM V2	99.00
TypeSmith 2.5	129.00
Vista Pro 3.1	59.95
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Joystick Bundles

The following Joystick Bundles were originally priced at $99.00, NOW ONLY $24.95 - Your Choice: *Suncom TAC 3 or Suncom TAC 30 w/Theme Park Mystery & Killing Cloud software* or *Ergo Joystick w/Team Suzuki, Speedball 2 & Predator 2*

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Includes KCS V3 & Copyist Apprentice
Originally sold for $469.00
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Software Hut

SUPER SPECIALS

DKB MegAchip
Expands your Amiga 500 or 2000 to 2Mb of Chip-RAM, great for all graphic applications, including the Video Toaster. Included is the DKB board w/1Mb of additional Chip-RAM and a 2Mb Agnus. Complete with manual for easy installation.
$199.95

DKB A2632 RAM Board
A 32-bit RAM Expansion Board for the CBM A2630 Accelerator Card. Allows 32-bit RAM beyond 4Mb, expandable to 112Mb using 32-bit wide SIMMs. Faster than RAM on A2630 and full Burst Mode support. Perfect for Video, Graphics, Animations, and DTP.
$189.00
Options:
Add 4Mb RAM - $159.00
Add 8Mb RAM - 309.00
Add 16Mb RAM - $599.00
Add 32Mb RAM - $1179.00

DKB A1240 Board
A multi-function board for the Amiga 1200. includes: 68030 for up to 6 times faster speed; room for up to 128Mb of 32-bit RAM using one industry standard SIMM; clock-calendar. Add an optional Math-Co up to 50Mz. Features an expansion connector for an optional SCSI controller.
1240 40Mz EC CPU - $249.00
1240 28Mz RC CPU - $199.00
Options:
Add 33Mz 68882 FPU - $79.00
Add 50Mz 68882 FPU - $109.00
Add 1Mb RAM - $49.00
Add 2Mb RAM - $89.00
Add 4Mb RAM - $159.00
Add 8Mb RAM - $309.00

Power Point HD Internal Floppy
Accepts DD 880K disks or HD 1.76Mb disks. Compatible with PC disks. 1 Year Warranty. Requires Workbench 2.1, or higher.
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Same features as above model. Connects to external disk drive port of any Amiga. Perfect for users who lack an internal bay.
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Installs internally in your A1200 on the clock header of the Motherboard. Automatically recognized by AmigaDOS.
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Chinon Internal H. D. Floppy Drive
Now available, from Commodore & DKB, is the Chinon 4015 HD Floppy Drive. This is the same unit as used in the Amiga 4000, now also compatible with the A2000. Drives can be used as either df0: or df1: (or buy two and use as both). Complete with installation instructions.
$139.95

DKB A3128 RAM Board
A 32-bit RAM Expansion Board for A3000/4000 owners. Allows 32-bit RAM expansion to 146Mb using industry standard 4, 8, 16, & 32Mb SIMMs. Easily installs in any slot. A MUST HAVE for Toaster users.
$249.00
Options: Same as A2632 on left.

DKB A1202 Board
A multi-function board for the A1200. Provides the max Fast-RAM expansion possible plus a clock-calendar. The 2 sockets allow 1, 2, 4, or 8Mb RAM using standard 32-bit SIMMs. Optional Math-Co can speed up math-intensive programs as much as 10 times, or more.
1202, no FPU, 0K - $114.95
Options:
Add 16Mz 68882 - $25.00
Add 25Mz 68882 - $49.00
Add 33Mz 68882 - $69.00
Add 40Mz 68882 - $129.00
Add RAM - Same as A1240 on left

KwikStart 2
Allows A1000 owners to install 2 different Kickstart ROM chips. Upgrade to latest OS without using system memory yet you can still boot from disk-based Kickstarts.
$54.95
Options:
1.3 OS ROM - $19.95
2.04 OS ROM - $29.95
3.1 OS Kit - $159.00

DKB 4091 SCSI Controller
High-Performance, DMA, Fast SCSI-2 controller for Zorro3 expansion slots. Includes SCSI internal connector, ribbon cable, & hardware to install a 3.5" HD on the board and a high-density SCSI-2 external connector.
$349.95

Super Bundle
Purchase the 4091 and 3128 at the same time for a special price of:
$479.00

Disk Expander
This software doubles the capacity of your floppy or hard drives. Easy to install and works without notice, in the background. Compression ratios very from 30% to 70%.
$39.95

Education Software

Fun School Math, ages 7>11	$18.95
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Fun School 3, ages 7+	18.95
Fun School 4, ages under 5	18.95
Fun School 4, ages 5>7	18.95
Fun School 4, ages 7>11	18.95
Mavis Beacon Teaches Typing	33.00
Mickey's Jigsaw Puzzles	35.00
Mickey's Memory Challenge	35.00
Mickey's 123s	35.00
Mickey's ABCs	35.00
Memory Challenge Series One	29.00



GVP A500 HD8 Plus
We have acquired the last batch of GVP's best selling A500 peripheral. It will hold any size SCSI HD and 2Mb, 4Mb, or 8Mb of RAM. It's own Power Supply is included. One Year Warranty by GVP. Hurry, as supplies are limited.

GVP A500 HD8 Plus w/no HD	**$199.95**
w/170Mb Quantum HD add	**215.00**
w/270Mb Quantum HD add	**259.00**
w/540Mb Quantum HD add	**389.00**
w/2Mb RAM add	**86.00**
w/4Mb RAM add	**168.00**
w/8Mb RAM add	**319.00**

A4000 G-Force 040-40
GVP puts a 40Mz Motorola 040 in your Amiga (030 or 040) & couples it with, up to, 32Mb of super fast SIMM32 memory. directly controlled by this blazing processor.

G-Force A4000 040/40/40/4Mb	$999.00
GVP SIMM 32 4Mb 60Ns	225.00
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A2000 G-Force 040-33 Combo
The ultimate combo: Motorola 68040 processor blazing at 33Mz with room for up to 64Mb of fast 32-bit RAM; integrated SCSI2 interface; bonus IOExtender for an extra parallel and buffered high-speed serial port.

G-Force 040/33Mz/4Mb	$1049.00
G-Force 030/40Mz/4Mb RAM	649.00

4008 SCSI2 Controller
Add up to 7 SCSI devices to your Amiga and smile. Provides room for up to 8Mb of 16-bit RAM.
GVP 4008 SCSI Controller $149.00

TBC Plus
This pro quality (CCIR-601), all digital time-base-corrector uses state-of-the-art 8-bit 4:2:2 video processing. Plus, it provides a real-time video frame-grabber and 16.7 mill color frame-buffer; a full SMPTE/EBU time-code receiver/generator and a comb filter is available; will transcode composite and Y/C inputs; a 3 channel video input switcher (in composite and Y/C) ic provided; and programmable video special effects.
GVP TBC Plus $599.95

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Connect to the world of video with our built-in transcorder to convert input video to composite, Y/C, RGB, or YUV outputs! Includes dual-input audio panel. Full support AGA and "classic" Amigas. SCALA users can purchase an EX module from SCALA.
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GVP Spectrum 28/24 EGS 2Mb $379.00

1230 Turbo
Accelerate your A1200 up to 50Mz. Room for: up to 32Mb of 32-bit RAM; an FPU; A1291 SCSI kit.

1230 SCSI Ser2 40Mz 4Mb	$399.00
1230 SCSI Ser2 50Mz 4Mb	599.00
1291 SCSI Controller for 1230	95.00
FPU 50Mz for 1230 Accelerator	115.00

DSS8+
This is the quietest 8-bit sound sampler yet made. New 3.0 software supports direct to disk (hard disk) recording and playback.
GVP DSS8+ Sound Digitizer $79.95

M-TEC Germany

Great New Amiga 500 & 1200 Peripherals

M-TEC RAM
This is a 2Mb RAM board for A500s. Mounts internally, in the trap door, and into your Gary IC socket, giving you 2Mb of additional fast-RAM. No soldering is required.
$139.95

M-TEC AT-500
This is a Hard Drive Sub-System plugging into the Amiga 500 expansion slot. Will hold any 2.5" or 3.5" Hard Drive and it has room to hold 2Mb, 4Mb, or 8Mb RAM on the controller. A unique feature is a physical switch allowing you to mount an additional internal Kickstart ROM, such as 2.04 or 3.1, and still keep whatever ROM is in your A500. Also, the unit has an ON/OFF switch to turn off the Hard Drive, if required.
M-TEC AT-500 w/No HD - $149.95
w/250Mb HD - $379.00
w/350Mb HD - $419.00
w/540Mb HD - $499.00
Options:
2Mb RAM Installed - $86.00
4Mb RAM Installed - 170.00
8Mb RAM Installed - $309.00
Kickstart 1.3 ROM - $21.95
Kickstart 2.04 ROM - $32.95

M-TEC 68020I Turbo System
This is the powerful, yet affordable, accelerator the average A500 user has been waiting for! Includes a 68020 CPU & 68881 Math-Co, both running at 16Mz. Also included is a SIMM socket for up to 4Mb of 32-bit RAM. The board attaches to your Motherboard with NO soldering. Install disk and manual are included.
$99.95
Options:
1Mb 32-bit RAM Module - $49.95
4Mb 32-bit RAM Module - $165.00

M-TEC T1230/28 RTC
This is the powerful, yet affordable, accelerator the average A1200 user has been waiting for! Includes a 68030 CPU and 68882 Math-Co, both running at 28Mz. Also includes a SIMM socket for up to 8Mb of 32-bit RAM. The board plugs into the Trap Door with NO soldering. A SCSI port is also provided, allowing the use of a SCSI1 or SCSI2 HD, when this module is released in the near future.
$169.95
Options:
1Mb 32-bit RAM Module - $49.95
4Mb 32-bit RAM Module - $165.00
8Mb 32-bit RAM Module - $319.00

Video Products

Color Handscanner w/OCR software	$259.00
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Vidi Amiga 12 RT	249.00
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Mastering Amiga DOS 3 Reference	31.00
Mastering Amiga DOS Beginners	27.00
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Super Denise 8373	28.95
CIA 8520 chip	13.50
Gary 5719 chip	13.95
Paula or Denise chip	18.95
1.3 ROM chip	21.95
2.04 ROM chip	32.95
2.05 ROM chip	34.95
Super Buster Rev 11	65.00
W. D. SCSI Chip Rev 8A	35.00

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Fully integrated, allows unlimited phone mailboxes & private fax receiving. Send faxes from any program that prints; call in remotely and retrieve faxes sent earlier; plain paper or paperless faxing; call routing with Centrex/PBX support; and more.
GVP Phone Pak v2 $229.95

ioExtender
On a single card, you get an additional parallel port, and a high-speed, FIFO buffered serial port for speeds in excess of 57,600.

GVP ioExtender	$109.00
2nd Serial Port for ioExtender	25.00

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From p. 44.
tailored to the needs of each project. For them, GDS might be a good prototyping system, possibly even a production tool. For those who want professional-quality tools and can't write their own, GDS can save months or years of development.

GDS is well suited for creating professional-quality games that don't devour every last CPU cycle and byte of memory. If you've mastered the basics of C and/or assembly programming and continue to learn by reading reference material and example code, GDS could be your ticket to fame as a game developer.

—Dale L. Larson

Video Escort 2.5

Mr. Hardware, $x299.95

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
***Minimum system*: SBase4 Professional, 1MB, hard disk.**
***Recommended system*: 2+MB.**

Customized SBase4 Pro business-forms package for videographers.

Anyone who has tried to make some money videotaping weddings or graduations can appreciate the logistical problems involved in coordinating such events. Organized as a series of forms, Video Escort (VE) uses the power of Oxxi's SBase4 Professional to maintain and coordinate several databases. Thus, lists of customers, employees, equipment, and locations can all be tied together with a few mouse-clicks.

Video Escort Services

Video Escort is supplied as compressed files on a single floppy disk. Flawless installation is handled through a custom script. The first time VE is run, certain defaults are set up, including the printer and your company's name and address. All of the on-screen requesters for this operation refer you to specific pages in the manual if you need more information before making a choice.

The Main Menu form gives access to each of the ten areas that make up the package. Most video-production jobs begin with a contract. A click brings up a four-page form, with each page having access to the appropriate database for creating a contract. If the job is for a repeat customer, a few mouse-clicks will pull in the existing name and address information from your database. Select one of the preprogrammed event buttons, which you can customize for your own business. Likewise, you can retrieve locations from your database or enter them manually. After you select the employees and equipment needed for the job and the number and types of tapes the customer requires, VE figures a total price, adds the tax, and prints out a contract.

After the tape has been shot, you can check the Library form for existing graphics and sound effects you may wish to add. This form also keeps track of your tapes, so that if someone comes back to you later for another copy, you can quickly find the original. Use the Editor form to make notes for editing the tape. The editor can note the type of music and graphics used, as well as track the job through the editing process. Use the Label form to print identifying labels for in-house use or finished labels for your customers. Because of the relational nature of SBase, you can also have the package print labels ahead of time for jobs you have scheduled.

The Receipts form allows you to credit payments to the account, and the Information form helps keep track not only of the job status, but also of details such as who it was that referred the customer to you. The Reports selection provides thirteen separate reports, ranging from mileage figures to a listing of pending bookings. The Schedule form gives access to all upcoming events that have been booked. The Crew Manager form is given to the person in charge of a particular crew. This four-page form contains the details on the shooting location, space for directions, a list of the crew members who are assigned, and other details such as which cameras to use and how many batteries to take along.

The last form available is the Maintenance form, which gives you the power to change any of the defaults you chose during the initialization of the package. Flexibility is an important feature of VE. No two businesses operate in the same way, and you can customize the contract language and the different packages of services that are offered.

Smooth Operator

All of the forms operate in the same manner, either providing fields for you to fill in, or bringing up requesters for you to choose from. Anyone familiar with the operation of SBase4 Pro will feel right at home. Navigation through and between forms is by gadgets, either advancing through a form or returning to the Main Menu before going on to another form.

The only problem I encountered was related to SBase rather than Video Escort. SBase allows you to set a default directory for the program to open to. I had SBase opening to a different directory than the one in which VE was installed. While most people who buy this product probably will not install it in a directory other than their main database files, it is one of the few oversights in the otherwise complete manual. The manual, composed of 125 loose-leaf pages in a binder, contains several tutorials covering general database skills, as well as specific Video Escort functions.



SBase4 form used with Video Escort.

The VE package requires a password before it will allow access. While this prevents casual access to your data, one of the items available through the Maintenance Form is the password you've chosen. Once the system is operating, anyone using it can reveal the password, and even if they don't change it and lock you out, your data is no longer secure. I think a better system would be to require the password once again when accessing the Maintenance Form, or at least to hide the password within this form, thus requiring you to enter the existing password before changing it.

Due to the disk-intensive nature of databases in general, the fastest hard drive available will still seem slow on occasion. If your databases grow very large, you will have to resign yourself to wait as the system searches, and even to wait while VE switches between forms.

Although many people just beginning a video-production business will not need all of the power and features offered by Video Escort, few will ever outgrow the capabilities of this package.

—Rob Hays ■

Looking for More Power From Your A500 or A2000?

The CSA Derringer Accelerator is the Answer

Give your Amiga 500 or 2000 the power of an A3000 for under $500

- Holds up to 32 megabyte of 32 Bit Ram.
- 68030-25 mhz cpu *with* MMU (not EC)
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- 1 meg of 32 bit RAM (remaps Kickstart)

Only $399.00

With:
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New Derringer Platinum 50mhz Only ~~$699.00~~ NOW $589.00

Includes:
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Same features as the CSA Derringer but faster!

50mhz for the price others charge for 40mhz!



GVP– A1230 TURBO +

50mhz Accelerator *with* MMU

$499.00 with 4mb 32 BIT RAM.......... *FREE* For 50mhz FPU.................... FREE

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HP II, IID, IIP, IIID, IIIP and all other Plus Series

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Similar savings on Panasonic, Star, OKI, TI, Nec, Epson and others. Call for Pricing .

Panasonic/Citizen 32K Buffer $14.95

2.04 Rom	only $39.95
Super Denise	$33.95
CIA 8520 $10.95 or two for	$20.00
MC68000/68010	$15.00

A1200 28Mhz Turbo Board

with Free Co Processor and MMU by MTEC GERMANY

$169.95

Real Time clock. Fast Sychronous Operation. Optional Fast Scsi II 1,2,4, or 8 meg Fast Ram for Remmapping Kickstart

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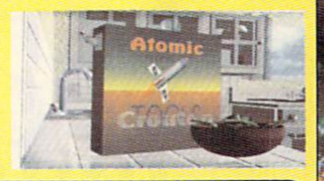
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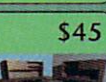


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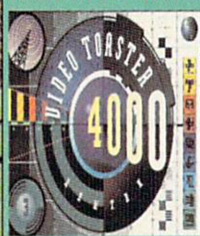


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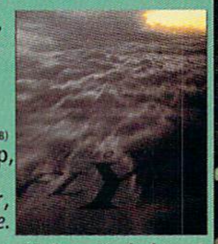
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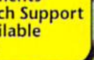
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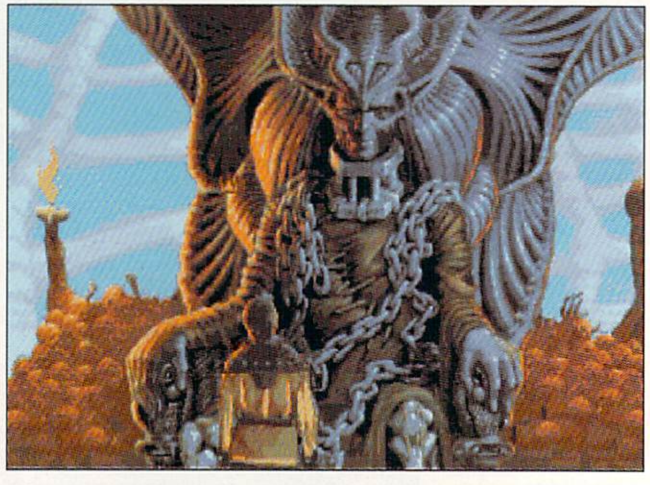
BETTER LATE THAN never: *Sierra* has returned to the Amiga market with a relative bang. With **King's Quest VI: Heir Today, Gone Tomorrow**, Sierra's first Amiga game since 1992's Conquest of the Longbow, the California publisher finally has made the sort of animated adventure that, while not without its flaws, does credit both to the genre and to the Amiga.

The style of play isn't all that different from the treasure hunts in the earlier King's Quests: Get object, use object to get another object or to open up new territory, and repeat until done. The story follows a shipwrecked Prince Alexander (whom you may recall as the young hero of King's Quest III) as he visits five disparate islands in an effort to recover his beloved princess, Cassima (who is, naturally, in thrall to the evil vizier). Ho-hum, eh? The usual Sierra stuff.

Well, no, not ho-hum. For one thing, the presentation is decidedly improved. This is the first Amiga conversion that Sierra did not do itself; instead, it drafted English developer Revolution Software (the outfit behind Konami's Lure of the Temptress and Virgin's Beneath a Steel Sky), and you'll notice the difference immediately. The colors have greater luster, even though there are only 32 of them; KQVI isn't quite up to the 256-color IBM original, but it's a nice approximation, with an impression of solidity, smoothness, and weight. (An AGA version was planned, but apparently has been called off.)

Similarly, while the game flows along particularly nicely on an accelerated machine, it's now playable on a stock 68000 without the sense that heavy-duty rendering is going on in the background. Spot animations, which used to slow down the whole operation, are brought off in a more easy-going, Amiga-like fashion. And while Sierra mastered the Amiga's music-playing abilities long ago, never has a Sierra score sounded this majestic.

Despite an entry-level, fairy-tale sensibility to the story, KQVI is a better game; it pulls a number of unconventional stunts that will keep you pleasantly off balance. It provides a character who, under various guises, coaxes Alexander to do things that can kill him. A huge two-level maze is sequestered deep in the game, and you'll have to keep wits (and maps) about you to pull through. It's more open-ended than most of its predecessors, and while it still has bottlenecks in which certain actions are necessary, you're given a lot of leeway to roam. (In fact, about two thirds of the way through, the path splits in two—one route straightforward, the other elaborate and bound up with magic spells (this an evident nod to KQIII). The writing has evolved into storytelling; by the time Alexander meets the Lord of the Dead (pictured) on the cusp of the endgame, it's positively poignant.



Prince Alexander challenges the Lord of the Dead in King's Quest VI.

It was probably too much to hope that Sierra/Revolution would get everything right the first time out. The screen-top icon bar often inherits a bleached-out cast from the playfield, and ►

ShowBits: CES

WITH CBM MORE liquid than solid, the Amiga was at best a vaporous presence at summer CES compared to the relatively lively January show. But, while out of sight, Amy was not entirely out of mind. ***Take 2***, the outfit built around the former Paragon Software, indicated that it's releasing Amiga conversions of two of Microprose's IBM games: the celebrated space empire-building game **Master of Orion** and the sadly-neglected RPG **BloodNet**—a tale of vampires and net-lurking set in a future New York. Look for them around the middle of next year. (Another Paragon game, **Twilight 2000**, is slated to be released for AGA machines by England's ***Empire Software***.)

The Amiga news out of ***Domark*** was mixed. Designer Mike Singleton indicated that, contrary to reports in the British press, he is not planning an Amiga version of the enormous strategy/adventure, The Lords of Midnight. However, Domark reps indicated that it's likely we'll see a version of its forthcoming high-end helicopter sim, **Apache**. □

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some of the more detailed artwork lacks definition. (The face on Alexander's animated figure looks like a crash-test dummy's, and when one of Cassima's hairs turns up in your inventory, it looks more like a dirty earthworm.) I ran into a graphic glitch at one point, and the game repeatedly locked up in an alcove off the upstairs hall in the palace. The hard-disk installation process is a long one (even for a 10-disk game) and supports only one floppy drive. There's no documented way to quit to Workbench. Indeed, despite acknowledgement that some elements of the game have been changed from the IBM original, there's little in the way of Amiga-specific documentation.

The pruning has been judicious. KQVI hasn't been cut so much as trimmed and tightened up—the sort of improvements more typically associated with Amiga pros like MicroProse. This is a major step for the publisher, and it's bound to be a good time for us. Well done, Sierra, well done. And welcome back.

What's Up, Psygnosis?

Psygnosis, the Liverpool-based publisher—long a vital force in the Amiga market—recently released in quick succession three games that are almost inarguably the worst in its nearly decade-long history. That's taking into account early releases like Bratacus and Deep Space, as well as acknowledged second-echelon games that used to be released via the Psyclapse label. And it also includes unfortunate recent experiments like Red Zone. What the *devil* has happened to Psygnosis?

Circumstance would seem to point a finger at parent corporation Sony, which bought the company in 1993, because all three games are licenses based on Columbia Pictures film properties—arcaders and beat-'em-ups without a wit of originality or cleverness or any special affiliation to their source material.

Bram Stoker's Dracula

Bram Stoker's Dracula has been in the works forever. Contacts at Psygnosis suggested that the Amiga version might finally emerge as a hybrid of two earlier, artistically less-than-successful Dracula games: the sideview Sega beat-'em-up and the IBM Wolfenstein-3D-like, free-scrolling action adventure.

Unfortunately, the Sega game won out. (The IBM would at least have been a relative novelty on the Amiga.) There's not much to it. The appeal of the quasi-realistic character and the sepia-tone backdrops will last about five minutes. Then the monotony of the laughter, the disembodied sounds, the oddly mincing movements, the trivial opponents, and the unlikely challenges begin to set in. Score: D.

Last Action Hero

Last Action Hero is simply a Double Dragon clone, with none of the artistry (albeit it crude) that those games sometimes exhibited. The character looks more like James Caan than Arnold's Jack Slater. The scenery and opponents have almost no variety. It's like playing in your sleep—the same game repeating over and over again—and if that sounds like a description of a nightmare, well, so be it. Score: D–.

Cliffhanger

If good movies made for good games, then **Cliffhanger** should have been a great mountain-climbing adventure. As it happens, it's the most abysmal thing Psygnosis has ever laid claim to and the worst major-label Amiga game I've ever seen: a tiny character, moving awkwardly over unintimidating terrain, dodging clumps of snow, and punching hawks and wolves (which are indistinguishable by color). Ocean, which has a history of lame film licenses, could do far better than this. In fact, there's much better stuff in PD. Score: F. ►

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Commodore UK Rules! (Amiga International?)

The trouble with the blame-it-on-Sony theory is that it doesn't account for the inconsistency in quality that has increasingly infected Psygnosis' releases over recent years. Most games up to and including Shadow of the Beast III, Lemmings II, and Hired Guns arrived with an almost classical sense of progression—an impression of being on a trip to someplace really splendid. Every step Psygnosis took was a benchmark, every footprint rimmed in gold.

But market forces being what they are, Psygnosis' agenda has increasingly slipped in recent years toward the IBM and the consoles. Its Amiga games over this period have been plentiful and not half bad (until this current crop of film-based mutants), but they've become increasingly trivial, and that mission-like sense of continuity has vanished. Psygnosis seems to have turned into a sort of Amiga smorgasbord, sampling the wares of this developer and that developer in one-off ventures. Tasteful one-off ventures, to be sure, but in the overall picture, Psygnosis is not pushing progress so much as product.

Innocent Until Caught

Consider **Innocent Until Caught**, which has finally made its way from the IBM to the Amiga. You may recall my characterization a few issues back of Virgin's Beneath a Steel Sky as having a sense of weight. Well, this conversion of Psygnosis' first animated adventure is a comparative lightweight. Despite a similarly dark tale—you're a professional thief who must pay his tax bill or die—and an attempt at a similarly devil-may-care point of view, this 10-disker is primarily an exercise in cheesiness.

That's due in part to the story, which has you skulking about in brothels, bars, backs alleys, subways, dingy pawnshops, and assorted other damp rocks. Unfortunately, it's also in the presentation. It's in the cartoon bubbles in which all text appears (and which make everything that transpires therein feel insubstantial). It's in the way the pointer never behaves quite as you want it to. It's in the crashes that occur when you don't run bind drivers first. It's in the serviceable but somewhat bloodless graphics that—seemingly regardless of the mode in which IUC is booted—eventually begin to deteriorate into ever-larger black blotches. It's in the time-wasting manual.

And it's in the frantically "humorous" text—waving its hands and stamping its feet at us like a hyperactive child with a story to tell. Innocent gets an audience on the strength of its strong bloodline, but proves to have little to say and little art in saying it. Verdict: Guilty. Score: C–.

Puggsy

Or consider **Puggsy**, which has been waiting in the wings even longer than Dracula. It was initially slated for release on the Amiga in 1991, but was diverted to the consoles instead, so many of you have probably long since mentally consigned this arcade game—based on the famous Amiga demo Puggs in Space—to the same plain of oblivion inhabited by Planetside, Cuti-Poo, and the Lemmings Construction Kit.

Usually, a game lost for so long stays lost, and this one probably should have, as it's now somewhat out of date. Back then, Psygnosis was highlighting one particular feature: Puggsy's in-game objects would have real-world properties (you could stack barrels, but you couldn't stack balls). They still do, but it's no longer the draw it might have been, as Puggsy is now just one of a horde of arcade games with useable objects—and not a particularly well-drawn one at that. Score: C.

The Silver Lining

This is not to say there isn't good stuff, too, but it's in the minority. Perihelion (reviewed in September) is a weird but clever RPG, and Second Samurai is a grand arcade adventure.

Wiz 'N' Liz is an utterly charming arcade romp with tiny characters, delightfully zippy speed, and a guileless premise (collecting bunnies and spell recipes) that's a joy to play, even if you don't know quite what you're doing. Score: B+.

Globdule is an improvement on Bubble Bobble, with creditable obstacles, open architecture and a sticky lavender blob doing the fruit-grabbing. (He wants to be a toy. Long story.) Score: B–.

And **Brian the Lion**, from Reflections (the outfit that did the Beast games), is a classic pure-arcade followup to those dark adventures; it slyly and seamlessly integrates all sorts of console-like tricks in a brilliant Amiga setting. Score: B+.

Coming Attractions

Nor is it likely that we've seen the last of the good stuff Psygnosis has to offer. **Nova Storm for CD32** (a re-titled Scavenger 4) should bring Microcosm technology forward another step. The impending **Operation G2**, from the designers of Obitus, finds Psygnosis in Space Hulk territory. And despite DMA Design's decision to drop Amiga work, we may even see Lemmings 3.

But, what I wouldn't give to have the old Psygnosis back. ■

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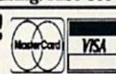
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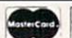
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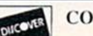
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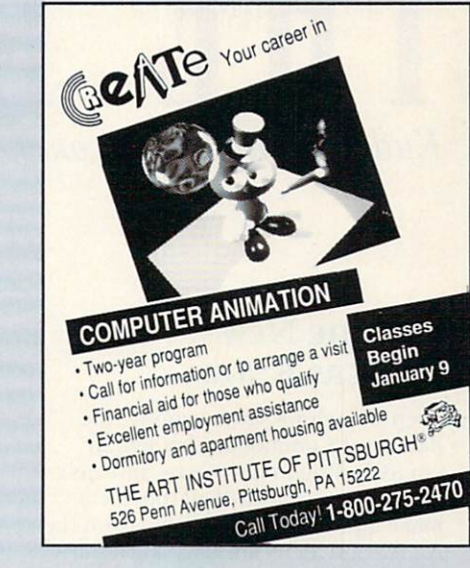
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THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

Let the New Owners Know . . .

Even though we saw it coming, the demise of Commodore has left an empty feeling in our hearts and anxiety in the stomachs of all those who make a portion of their living with the Amiga and all its ancillary third-party gear. We can only hope that the winners at the Bahamian fun carnival have the wisdom and insight to pick up the pieces, improve the Amiga platform, and prepare it for the future.

I propose that when we finally hear reliable, positive news of new owners for the Amiga platform, each and every serious Amiga user send these folks a letter of encouragement letting them know just how important these machines are in our lives. Especially those of you who, like myself, have based a video-production business around the Amiga must make the new owners realize that the Amiga really is the "tool bin" of desktop-video production.

Jim Crabtree
Oakland, Maryland

. . . What the Future Amiga Needs

As far as I am concerned, the Commodore Amiga is dead. It is the responsibility of the new owners to resurrect it as something else. One way to do this is not to use Motorola's 64-bit "Power PC" microprocessor, but some other RISC-based processor. This would keep the Amiga a proprietary system and not let it become part of the "DOS-pooling" that Apple and IBM are developing for the Power PC. Using a dedicated 32-bit RISC processor as the brains of an "AmigaRISC" computer would mean that the current investment in Amiga-based hardware would not become obsolete.

A ROM upgrade and recompiled software code is all that is needed, and I think that Amiga-based companies would rather do that than redesign their entire line of products. Users should be happy with this option as well, for their current hardware investment would still be usable.

The new Amiga could be the "imagination machine" once more. With relentless effort on the part of the new manufacturer, support from third-party companies, and the undying devotion of the users, the Amiga can revive as the powerful computer we all want it to be.

Alexander Christ
Wichita Falls, Texas

When a software company creates a game for the Amiga, it has to keep the little guys in mind, such as the A500s, A2000s, and A1200s. To our disadvantage, these are the machines that are the majority in the Amiga market. This results in sluggish adventure games with horrible sound and washed-out colors, certainly not a fine example of this multimedia computer's capabilities.

With relentless effort on the part of the new manufacturer, support from third-party companies, and the undying devotion of its users, the Amiga can revive as the powerful computer we all want it to be.

So my suggestion to the new owners of the Amiga technology, whoever they will be, is to dump the slow '020 line of processors and stick with the faster '030, '040, and (soon) '060 CPUs. A configuration for a low-end Amiga might incorporate a 25-MHz '030, while a high-end machine might use a 40/50-MHz '040. This would leave the '060 for Amiga graphics workstations.

In addition to fast CPUs, every Amiga should be equipped with a hard drive. I don't know about other users, but I don't consider disk-swapping to be a fun part of an Amiga game experience.

With these improvements, game companies that have switched to the MS-DOS or Mac markets will find the new Amiga hardware inviting and may well return to us. Current Amiga game companies will no doubt be very grateful for the extra power! And—most important of all—the Amiga gamer will greatly benefit.

Joe J. Cassara
Miami, Florida

We Don't Like This Diet Either!

This is just a brief letter to complain about how incredibly thin *AmigaWorld* has become for the September issue. Earlier this year, the pages hovered around the 100 mark; now they are down to 64. I realize the Amiga is in trouble, but does that mean you are, too? I will certainly not be renewing my subscription if the magazine continues to be reduced.

Since 1986, I have really enjoyed my Amiga computers and have been very upset with Commodore over its indifferent attitude in marketing what is a fantastic computer. I can only hope that it will be headed for a better future with the possibility of another company in control.

Finally, I would like to inform you that the Bahamas are in the Atlantic Ocean, not the Caribbean Sea, as you wrote in your editorial. I am amazed at the number of people who make this mistake.

Roger J. Hale
Topsfield, Massachusetts

*We're looking forward to that "better future," too, Mr. Hale, and the promise it holds for thicker, less anemic issues of **AW** . . . oh, and thank you for your geographical clarification. —Eds.* ■

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